# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOLUME L. CHICAGO, ILLINOIS, JANUARY 18, 1908. NUMBER 3.


## Address

## A PLEA FOR EARLY EXPLORATORY LAPAROTOMY IN GASTRIC DISEASES OF DOUBTFUL NATURE.*


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At the present time there is no organ in the body whose diseases are more common, and concerning which wider interest is being manifested, than the stomach. The appalling complications of hemorrhage, perforation, hour-glass contraction, disabling adhesions and malignant disease are altogether too frequent and can, I believe, only be prevented by earlier diagnosis of the conditions making them possible, and this can not be done in the present state of our knowledge save by timely exploratory laparotomy. Other means at our command are wholly inadequate, and to depend on them further is needlessly to sacrifice many, I may say thousands, who might easily be saved.

The danger of such an exploration, if done in time, is inconsequential and out of all proportion to the benefits derived therefrom. To those who think differently and overestimate its risk my answer is that he who would keep his life must hazard it. The dangers of hemorrhage and perforation, if not fully appreciated, are at least acknowledged by all to be fairly common. A greater danger than either, possibly than both combined, is just beginning to be appreciated by those having the greatest experience in gastric diseases, yet it is scarcely considered by the average practitioner. All admit that carcinoma of the stomach is a frequent malady and when diagnosticated is generally a hopeless one. Few admit the fact that one-third of the entire number of carcinomata in the body are found in the stomach. Fewer still understand that 80 per cent. of gastric cancers are situated at the pylorus, and that certainly more than one-half of them have their origin in ulcer, which, in the chronic state, is amenable only to surgical treatment. That acute, superficial or mucous ulcers generally heal under proper diet and medical treatment, I have always believed, and I have steadfastly refused to interfere surgically in such cases where they were present or presumably present. I as distinctly believe (and have ever done so) that chronic, indurated or callous ulcer is strictly a surgical affection, yielding only to operative procedure, and that it is not only useless, but extremely hazardous, to treat it otherwise. I speak positively, for I have convictions on the subject which time and experience have served to deepen and render more pronounced. That my views are supported by those having the widest experience in gastric disorders I shall hope to show.

That benign ulcer of the stomach may undergo cancerous implantation is no longer conjectural but a demonstrated fact. Furthermore, it occurs far more frequently than was believed even a few years ago when attention was first drawn to the subject. Then an estimate that 6 per cent. of benign ulcerations in the stomach eventually became carcinomata was considered excessive and out of proportion to the facts. This we now know is much too low a percentage, as is shown by an analysis of the recently published experiences of surgeons doing, perhaps, the largest amount of stomach surgery in the world.

The correct settlement of this question is undoubtedly the most important one connected with gastric surgery, and if the danger of cancerous implantation is so great, as now appears certain, the strongest possible argument for radical treatment in well selected cases is furnished. This position is made stronger by knowledge of the fact that no one, however skilled he may be in diagnosis, can positively and at all times, even after the stomach is examined by sight and touch, differentiate between ulcer and cancer. Unfortunately there are no positive means of distinguishing between them except by the microscope. Gastric analyses have been found unsatisfactory, for, while possessing a certain amount of value, they can not be relied on. The history of the case is at times misleading and often incorrectly given by even the most intelligent patients.

I recently spent a few days at the clinic of one of the most brilliant operators and ablest exponents of gastric surgery in the world. The last two patients he operated on were cases of mistaken diagnosis. One, a man with marked and clearly demonstrable duodenal ulcer, was thought before operation to have cancer of the pylorus; the other, a woman with all the symptoms of gastric cancer, who had been brought a considerable distance for pylorectomy, was found to have an absolutely normal stomach. Not the slightest evidence of any lesion was present, hence the abdomen was promptly and properly closed without any operation on the stomach at all, after the intestines and adjacent viscera had been likewise examined with negative results. The mistake in diagnosis was more than atoned for by the excellent judgment shown in declining to perform an unnecessary operation.

Every man who has done many operations on the stomach has had similar cases, and all, perhaps, have occasionally made a second mistake by doing a gastroenterostomy when it was not only a work of supererogation, but harmful. The surgeon to whom I refer had done so, and that is why he did not do it again.

I have made three such mistakes in diagnosis in my own practice during the past ten years. The first pa-

* Address in Surgery before the Pennsylvania State Medical Association, Sept. 23-26, 1907.

tient was a neurasthenic, operated on seven years ago, with a perfect history of gastric ulcer. She had been in the care of two most competent internists who referred her to me as an undoubted case of ulcer rebellious to all medical treatment and, therefore, suitable for surgery. Although no lesion was found at operation, I did not question the diagnosis and performed a posterior gastrojejunostomy. She improved very much, her vomiting ceased and there was a decided gain in weight. At the end of six months her ulcer symptoms returned, but have never been as bad as they were before the operation.

Three years ago a man, aged 49, was brought to me by Dr. Hollman with every symptom of cancer of the pylorus. Moreover, there was a palpable mass as large as a small fist. He had been in the German Hospital of Philadelphia, a hospital in Baltimore and one in Washington. In each hospital the gastric contents were examined and, showing lactic acid, a diagnosis of cancer of the stomach was made. I unhesitatingly accepted the diagnosis which had been made so often, and sent the man to the Medico-Chirurgical Hospital for a gastroenterostomy. The clinical pathologist found lactic acid present, hydrochloric acid absent, and agreed fully to the diagnosis of carcinoma made in all of the hospitals in which the patient had been treated previously. At the operation an aneurism of the abdominal aorta was found. The stomach was perfecly normal. Strangely enough the man was markedly benefited by the exploratory operation, gaining much in weight and in every way for months afterward. I saw him two years later and was surprised to find him looking so well. In fact, the rest and diet so greatly improved his aneurism that he had few symptoms between the date of the exploratory laparotomy and the visit made to me two years later, when he came to consult me concerning an operation on the aneurism.

Our former belief that gastric ulcers occur most often in women and duodenal ulcers in men has been clearly shown by Mayo's and Moynihan's latest statistics to be unfounded. They are practically on a parity, gastric ulcer being slightly more frequent in the female, duodenal ulcer somewhat more common in males, instead of six to eight times as frequent, as was formerly taught.

Age also is no longer the guide it was previously thought to be, for we now know that old people not infrequently have ulcer and young people cancer. Such occurrences were formerly thought to be most exceptional and were pointed out as clinical curiosities. The truth of the matter is that it is only since these lesions have been studied at the operating table that anything approaching definiteness has been learned concerning them.

It would be fortunate if everything written on the subject of gastric diseases prior to ten years ago could be obliterated, for while there was much truth, there was more error in the literature before the time when the stomach fell under the domain of the surgeon and its several lesions were inspected, palpated and finally submitted to the microscope.

So impossible is it to make an absolute diagnosis from the symptoms, physical signs and gastric findings that it is my belief that more frequent exploration is called for, and until such is the practice we can not hope to avoid the embarrassing and humiliating mistakes that all of us make at the present time. When the time comes that patients with marked gastric symptoms, who have been treated medically a reasonable time without obtaining relief, are subjected to a proper laparotomy so that an approximately accurate diagnosis can be made, the cause of gastric surgery will have been enormously advanced. It is particularly necessary for a more frequent resort to exploratory laparotomy if we are to get the best results in both ulcer and carcinoma of the stomach. No one experienced in gastric surgery can question this statement. One has only to review the records from the largest clinics in the world to satisfy himself that comparatively few gastric carcinomata are operable when they are first sent to the surgeon. To await the formation of a tumor, as many do, is to make a radical operation almost out of the question. To await the appearance of lactic acid in the stomach contents is to allow the propitious time for surgery to pass.

Owing to the impossibility of differentiating between ulcer and cancer in some instances, a more radical treatment of the lesion than has hitherto been customary should be resorted to, inasmuch as such treatment is best in both conditions. In the former hemorrhage, perforation, hour-glass contraction, disabling adhesions and possible malignant degeneration are prevented; in the latter free and early excision is admittedly the only possible hope for the patient.

Anatomically the stomach would seem to be an organ where good results ought to be expected from a more radical treatment of cancer if the operations are done sufficiently early. There is, for instance, no reason why operations on the stomach should not be on a parity with those done on the mammary gland, where it is safe and conservative to count on 33 per cent. of cures, and there are many who claim even 50 per cent. and upward. I am not aware that any one has made such a claim in the operative treatment of gastric carcinoma, nor can it be so long as present conditions obtain. When the surgeon believes it his duty to excise all doubtful masses in the stomach, especially at the pylorus, where malignant disease is so prone to occur in persons approaching or past middle life, he will get much better operative results. Rapid emaciation with gastric symptoms in a person over 40 years of age almost invariably calls for an exploratory laparotomy. If a lesion is found and is not demonstrably benign, either pylorectomy or partial gastrectomy is demanded, according to the location of the growth.

As suggestive of the close relationship between ulcer and cancer, we have only to recall the fact that the topography of both is the same, 80 per cent. of each being found at the pylorus.

I have seen five times, within the past year, cases where it was practically certain that carcinoma has been preceded by long-standing ulcer, in one instance the ulceration lasting twenty-seven years, in another nearly twenty years. Moynihan[1] states that in his "last twenty-two cases of gastroenterostomy for cancer close inquiry was made into the previous history with respect to gastric ulcer." He continues:

> Of the 22 patients, 16 either gave a history of an illness which had been called ulcerated stomach or gastric ulcer. In two cases a history of chronic indigestion extending over more than twenty-five years was given. One of these patients had been operated on for perigastric abscess eighteen years before. From the conditions disclosed at operation it was clear that there had been a subacute perforation of an ulcer near the pylorus, and on the lesser curvature.
>
> The evidence in this series of cases shows that in 16 out of the 22 patients (72.1 per cent.), there had been gastric ulcer

1. Brit. Med. Jour., Feb. 17, 1906, p. 370.

many years before. The shortest interval between the attack of gastric ulcer and the onset of the symptoms which led to my seeing the patient for a condition which proved malignant, was three years; the longest interval was twenty-six years. There were two patients who gave a history of less than three months' duration; in both malignant disease, already far advanced, was discovered. Up to the time of the somewhat brusque onset of symptoms, there had never been any suspicion or hint of abdominal disease. One of these cases offered an undoubted instance of ulcus carcinomatosum, one edge of an ulcer being affected by a large mass of exuberant carcinomatous growth.

As to the existence of gastric ulcer as a precursor of malignant disease in the remaining cases, my records show that in 9 cases of gastrectomy there were 6 with such a history; in 3 cases of jejunostomy there was 1 case; in 6 cases of exploration there were 3 cases, and in 5 cases of gastrostomy there was 1 case.

In the whole series of cases a previous history of gastric ulcer was noted as follows:

| | | |
|---|---|---|
| Gastroenterostomy ..... | 22 | 16 giving such a history. |
| Gastrectomy ..... | 9 | 6 giving such a history. |
| Jejunostomy ..... | 3 | 1 giving such a history. |
| Gastrostomy ..... | 5 | 1 giving usch a history. |
| | 39 | 24 |

This is most significant, coming from Mr. Moynihan, who formerly believed that cancer was infrequently preceded by ulcer, as will be seen by consulting his paper,[2] where he estimates that 10 per cent. would cover the cases of carcinoma originating in ulcer.

Mr. Mayo Robson,[3] one of the earliest workers in gastric surgery, who, perhaps, has done more than any one else to place it on the sure footing that it has to-day, speaks quite as positively and to the point:

"The operation of excising the ulcer-bearing area, with the performance of an independent gastroenterostomy will, in the future, be performed more frequently, for, as I tried to show in my Bradshaw lecture at the Royal College of Surgeons, no less than 59.3 per cent. of cases of cancer of the stomach on which I had operated gave a history of chronic ulcer."

Dr. Graham states that a history of ulcer was obtained in 36 per cent. of cases of cancer operated on in the Rochester clinic, and a clear evidence of cancer development on ulcer in 30 per cent. of the last 40 partial gastrectomies. This affords the most potent argument for the radical operation.

Furthermore, of 112 posterior gastroenterostomies performed in Mr. Robson's practice for ulcer, not less than 4 patients died subsequently of carcinoma, the tumor developing in 1 patient at the end of a year after a perfectly successful gastroenterostomy, in 1 after two and a quarter years, in another after two and a half years, and in the other after three and a half years. There are other cases in this series where it seems more than probable that death was due to cancer, but in these there could be no mistake whatever as to the diagnosis.

W. J. Mayo, in his paper before the Congress of American Physicians and Surgeons, May, 1907, states that in 54 per cent. of the cases of cancer of the stomach submitted to resection (69 cases) in 1905-06 by his brother, Charles H. Mayo, and himself, both the clinical histories and pathologic examination of removed specimens made it certain that the cancers had their origin in ulcers. Therefore, we see that the Mayos are finding cancer even more frequently now than they did when quoted by Mr. Robson above.

In the same issue of the *Annals of Surgery*[4] in which Mayo's paper is published there are papers by Munro, of Boston, and Frazier, of Philadelphia, calling attention to the frequency with which cancer follows ulcer and advocating more radical treatment in hard, indurated, or suspicious ulcers at least. Both emphasized the impossibility of a differential diagnosis until the growth has been removed and examined with the microscope.

In a case reported by Frazier the history, symptoms, gastric analyses and appearance at the operation all pointed strongly to cancer, and there was no thought of ulcer before the report of the microscopist, as there were two enlarged lymph nodes in the greater and three in the lesser curvature. I agree with him in thinking that pylorectomy was the proper procedure, even had he known that the lesion was benign, such cases being potentially malignant. The patient made an excellent and prompt recovery and is to be congratulated on having been operated on in what was presumably the precancerous stage.

Munro, in his paper, speaks with characteristic candor and pessimism of his operations for gastric carcinoma. Of 100 cases sent to him and Bottomley at the Carney Hospital for operation more than 90 per cent. were hopelessly inoperable when they were explored. That only 10 per cent. of gastric carcinomata, when referred by internists, should permit of excision is a severe reflection on twentieth century medicine and demonstrates, beyond all possible doubt, the futility of everything short of exploration to make even an approximately accurate diagnosis. The late symptoms of cancer are positive and unmistakable, as a rule, and it is on such cases that the text-books base their classic descriptions. I repeat that the early recognition of cancer is generally impossible without exploration, and may be even with it unless the growth is removed.

Jedlicka[5] states that in our series of apparently inflammatory pyloric tumors there were 26.6 per cent. of ulcer carcinomas demonstrated microscopically. According to Stich,[6] ulcer carcinoma constitutes 30 per cent. of the entire number of gastric cancer. Ssapeshko[7] found that of 100 gastric carcinomas only ten cases did not originate on the base of a peptic ulcer. The same author reports cases which had developed pyloric carcinoma five or six years after a gastroenterostomy had been done for ulcer.

According to Rivière-Jaboulay, 20 per cent. of his cancers of the stomach were preceded by a well-marked history of ulcer. Other French observers, notably Doven, give a much higher estimate.

I think we have now satisfactorily shown that no one can reasonably question the fact that ulcer frequently undergoes malignant change and that a percentage of carcinomata, varying from 25 to 90, according to the best authorities, have their inception in inflammatory lesions. So much for the cancer end of it.

It would be interesting to know what percentage of ulcers or their cicatrices eventually degenerate into malignancy. I am of opinion that it will not be possible to settle this question for some time, the best way to do it being to follow the cases subjected to gastroenterostomy, excision, etc., carefully for years afterward. Operations on the stomach, in great number, have been done too short a time for the statistics to be valuable just now. We have, however, been able to collect a rea-

2. The Practitioner, September, 1904.
3. Brit. Med. Jour., Nov. 17, 1906, 1345.
4. Ann. of Surg., June, 1907.
5. Chronische Magengeschwüre, Prague, 1904.
6. Beitr. zuh Magenchir. in Bruns Beitr., 1903, vol. xl, No. 2.
7. Annalen d. Russ. Chir., 1900, No. 6 (Centralb. d. Grenzgeb. d. Med. u. Chir., 1902, p. 242).

sonable number of undoubted cases of benign ulcer which were subjected to gastroenterostomy and which—though the hosts continued in good health for a year or longer after the operation—subsequently became carcinomata.

Another significant fact is that ulcers at the pylorus are pre-eminently likely to undergo malignant change, while there is little tendency for them to do so in other situations. This is easily explained. First, there is considerably more irritation at the pylorus on account of its smaller caliber, and the necessarily greater friction caused by the food in its passage onward to the duodenum. Second, and more important than this, perhaps, is the fact that the acid chyme is thrown against the pylorus in great volume and with considerable force by the intermittent contractions of the stomach during digestion. I was amazed to see, as I was permitted to do in two instances, this process going on in the living subject; one, a case in which gastrostomy had been done; the other, a gunshot wound of the small bowel, high up, enabling me to watch perfectly the intermittent injections of chyme through the pylorus into the duodenum. It seems most reasonable that the effect of this secretion, especially when hyperacid, must be to irritate and partially digest the tissues already markedly impaired in vitality.

I have seen only one instance of an ulcer in any other part of the stomach than the pylorus which underwent malignant transformation. A man, 34 years of age, with a marked history of chronic ulcer resulting in hour-glass contraction in which the stomach was divided into two almost equal halves, was brought to me by Dr. Batroff. He was advised to have a gastrogastrostomy supplemented by a gastroenterostomy. He consented to the operation at first, but afterward was dissuaded by a friend. During my absence in Europe this summer he died of starvation. It was found at autopsy that the partition was near the middle of the stomach, as had been demonstrated by a skiagram, and that there were four healed ulcers in the pyloric portion, three in the cardiac, and on the base of one of the cicatrices a large cancer was growing. In this case there was so little communication between the cardiac and pyloric pouches that we naturally found much the same conditions obtaining as in the normal pylorus. The friends would not permit removal of the stomach by Dr. Batroff.

The history of this patient, as furnished me by his attendant, states that he had been "cured" many times by medical means, and yet he had a degree of hour-glass contraction that made it impossible for him to eat to satiety for several years previous to his death on account of the size of the cardiac pouch and the small communication with the distal or pyloric end of the stomach. He was compelled to eat a little and then wait until the cardiac pouch had emptied itself before taking more food. In short, he took his meals on the installment plan and died of starvation at an early age, when cancer is generally believed not to occur.

A careful investigation of the literature convinces me that there are but a few isolated instances on record in which gastric ulcers—not pyloric in origin—have undergone cancerous degeneration. The case of Cackovic and my own are the only ones thus far discovered by me.

I quote from Jedlicka,[8] who has made a very careful investigation of the subject: "It should be noted that all the ulcer-carcinomas were encountered in the pylorus, whereas ulcers situated in other portions of the stomach and which were examined did not reveal a single carcinoma." Therefore, we are justified in resorting to more radical measures when dealing with ulcers in the pyloric portion of the stomach than in those situated elsewhere.

Believing this to be the case, I suggested in 1900[9] the advisability of pylorectomy, which not only removes the existing lesion, but largely the ulcer-bearing area. This suggestion was renewed in 1903 before the American Surgical Association and the Surgical Section of the American Medical Association and has now been carried out in a reasonable number of instances. It preferably should be supplemented by a posterior gastrojejunostomy, for while pylorectomy removes the lesion with all of its potential dangers, gastroenterostomy corrects any existing functional disorders of the stomach. End-to-end anastomosis between the duodenum and stomach can be practiced if there is not too great disparity in size, but I prefer to close both and perform an independent gastroenterostomy.

That gastroenterostomy is itself able to relieve many cases of simple ulcer I do not question, but its most enthusiastic supporters can not successfully maintain that it removes the dangers of perforation, hemorrhage, hour-glass contraction and malignant disease. While not so pessimistic as Jedlicka, who maintained that he had seen but two instances in which gastroenterostomy had been perfectly satisfactory, yet I am inclined to believe with Montprofit, himself an enthusiast for gastroenterostomy, that the end results of this operation constitute its "black point." A few optimists believe that all fatalities from hemorrhage and perforation following gastroenterostomy occur very soon afterward and are, therefore, due to faulty technic. It is only necessary to give the names of the surgeons who have had fatal cases to successfully controvert this opinion, and if one is sufficiently interested to investigate the subject he will find that deaths from hemorrhage, instead of being due to faulty suturing at the time of the operation, have not occurred for one or more years in many, I may say most, of the cases herewith reported.

Robson in 22 personal cases, where he did gastroenterostomy in interval of hemorrhage, lost one patient on the eighteenth day and one two and one-half months after operation. Montprofit lost one case on the eighteenth day from hemorrhage (there was hemorrhage before the operation), and one two and one-half years after operation. Hofmann, of 37 gastroenterostomies, lost one on the twenty-ninth day after repeated hemorrhages. In Warneck's statistics of 398 cases there were 15 recurrences of severe hemorrhage, of which 5 were fatal. Donati, in 217 gastroenterostomies, found 11 recurrences of hemorrhage. v. Eiselsberg lost three cases, and Körte two. Fatal cases have also been reported by Kocher, Czerny, Mayo, Deaver, Moullin, Connell, Rydygier, Tuffier, Krönlein, Hartmann, Kümmell and many others.

I have encountered and could give the records of scores of fatal cases reported by surgeons from all over the world where death resulted either from perforation or hemorrhage, varying from one to five years after an apparently successful and satisfactory gastroenterostomy. The only reason why pylorectomy has not been more frequently performed is an exaggerated fear as to

8. Z. Operativen Behandl. d. chron. Magengeschwüre u. dessen Begleitserscheinungen, Prague, 1904.

9. Paper on Gastric Ulcer, American Surgical Association, 1900.

its mortality. We must admit that it is somewhat more dangerous than gastroenterostomy, for the one is best supplemented by the other. It is unfair to both gastroenterostomy and pylorectomy to measure their dangers at the present time by statistics made when these operations were in the formative stage. The mortality from gastroenterostomy has steadily fallen and is now, instead of being 25 per cent., certainly not more than 5 per cent. with the average surgeon; 2 per cent in the hands of those most experienced.

I have been able to collect 130 cases of pylorectomy for ulcer by American, German, French, Belgium and English surgeons and the mortality has been 6.9 per cent. Will any one maintain that a procedure so ideal in every way—removing as it does the lesion and reestablishing the function of the stomach—would be prohibitory with double or thrice such a mortality when the dangers of the lesion for which it is done are *per se*, still greater without operation? The mortality from perforation alone is 13 per cent., from hemorrhage 8 per cent., while that from malignant transformation is an indefinite, intangible, but an ever-increasing one, for it can not be denied that cancer in all situations of the body is startlingly on the increase.

The German and French schools decidedly favor the radical treatment of the lesion and esteem less highly, apparently, than English and American surgeons the boon which gastroenterostomy confers. Jedlicka speaks of excision as the normal procedure and claims for it a mortality 3.03 per cent. Lambotte reported seventy-two cases of simple pylorectomy with a death rate of 5.5 per cent. According to Rivière, who has made a careful résumé of the subject, gastroenterostomy is only indicated where there is a pure cicatricial stenosis at the pylorus; all other conditions demand pylorectomy.

I regret exceedingly that time limits prevent further elaboration of this subject, as I would like to show (and I will do so in a future paper) that, valuable as it is up to a certain point, gastroenterostomy is far from an ideal procedure; indeed, it is a makeshift, and when apparently most successful it permits the patient—after a period of good health varying from one to five or more years—to succumb to the remote effects of gastric ulcer which could have been prevented by a procedure only slightly more dangerous than itself, but far more beneficent, far-reaching and permanent in its benefits.

## *Original Articles*

# ARTERIOSCLEROSIS.

### A CONTRIBUTION TO ITS CLINICAL STUDY.*

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AND
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The subject of arteriosclerosis has received much attention of late, both in its pathologic and in its clinical aspects.

There has been a growing tendency to attribute symptoms, particularly nervous symptoms, to this condition. In a person offering almost any syndrome of symptoms referable to the nervous system, the mere presence of sclerotic arteries seems to establish the basis of the complaint without further analysis.

Nor does the tendency stop here; the fact once accepted that all varieties of nervous symptoms may be produced by sclerotic arteries, the next step is to assume, given the symptoms, that this condition must be present, even though no sign appears in those arteries which are palpable. This position is easily fortified by the knowledge that arteries may be hardened in one part of the body and not in another; but before we assume that they are so hardened it behooves us to acquire fairly accurate knowledge of the nature and frequency of the symptoms actually produced by such arteries.

As a step in this direction, taken from a new point of departure, we have examined a series of one hundred individuals presenting marked and obvious sclerosis of palpable arteries, with reference to the presence or absence of the prominent nervous symptoms commonly attributed to this condition. We have incidentally noted the blood pressure and the cardiac and renal conditions, though this branch of the subject has already received a degree of systematic investigation not yet accorded to the symptomatology, real or assumed, of arteriosclerosis.

The majority of the patients were examined in the neurologic department of the Massachusetts General Hospital. Through the kindness of the physicians in charge, a number were taken from the medical department of the same institution, a number at the Chelsea Marine Hospital and several at the Tewksbury State Hospital. The remainder were seen in private practice.

### NERVOUS SYMPTOMS.

The nervous symptoms commonly attributed to arterioscelerosis include: (1) Headache (Creery, Rosenthal, von Phul, Stengel, Witherle, Loveland, Leri, Colline, *et al.*); (2) vertigo (Creery, von Phul, Witherle, Leers, Leri, Ayer, Collins, *et al.*); (3) claudication, or epileptiform attacks (Witherle, Langwell, Russell, Surdie, Grasset, Dejerine, Ranzier, Leri, *et al.*; (4) loss of memory (Creery, von Phul, Witherle, Grossman, Leri, *et al.*); (5) insomnia, so-called neurasthenic symptoms, including emotional changes, irritability, etc. (von Phul, Stengel, Loveland, Collins, Creery, Leri, Starr, *et al.*).

(1) *Headache.*—Headache appeared in our series in only 22 per cent. This is a much lower percentage than we have found in ordinary healthy individuals if the young and middle-aged are included. In an investigation by one of us on the results of eyestrain[1] it was found that 69 per cent. of healthy individuals, mostly young and middle-aged, were subject to headaches, frequent in 45 per cent., occasional in 24 per cent.

It appears, therefore, that arteriosclerotics share in the usual lessening of headache accompanying advancing years, largely due probably to the relaxation of accommodation and resulting relief of eyestrain. This lessening of headache is, we believe, universally recognized by oculists, though the widespread skepticism regarding the influence of eyestrain may perhaps retard its acceptance among others.

A number of patients stated that earlier in life they had been subject to headache, but that it had disappeared in late years, in other words, during the development of the arterial hardening. Furthermore, some of those with headache stated it had lessened materially. The comparative immunity from headache in this series

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Walton, G. L.: Eyestrain, Its Importance and Its Limitations. Boston Med. and Surg. Jour., cli, No. 25, June 22, 1905.

is the more striking in view of the fact that signs of degenerative kidney disease were present in 36 per cent. of the cases and that the blood pressure averaged high, facts which preclude the suggestion that splanchnic implication was wanting in our cases.

We have, it is true, found headache and sense of pressure in the head during the attacks of claudication, with sufficient frequency to satisfy us that this immediate lesion is productive of extreme cerebral discomfort, but apart from this temporary condition our findings have made us extremely skeptical regarding uncomplicated arteriosclerosis, even with high blood pressure, as a cause of headache. If this symptom appears, therefore, in elderly persons we feel that further search for its cause is required in each case.

The objection may be made that in our series the sclerosis may have been limited to the peripheral arteries, but this objection is met by the fact that we have found a sufficiently large proportion of other cerebral symptoms to establish the fact that the cerebral arteries were frequently included.

(2) *Vertigo.*—We found vertigo in 65 per cent. of the cases. This offers a striking contrast to the infrequency of headache and confirms the supposition that arteriosclerosis is a potent cause of vertigo.

(3) *Apoplectiform Attacks.*—We have found a history of these attacks in 34, in some cases many times repeated. While this is not a large proportion in comparison with the occurrence of vertigo, it is large compared with the frequency of such attacks in non-sclerotic individuals, even in advanced life, and may fairly be attributed to the arterial disease, though even here we must remember that the question is complicated by the frequent occurrence of renal involvement.

The studies of Leri, who suggested the term claudication, have contributed greatly to our knowledge of these attacks. It is important to remember, in view of prognosis, that an apoplectiform attack in an arteriosclerotic does not necessarily mean either thrombosis or arterial rupture. The commonly accepted view of the pathology of these attacks supposes, at least, either a spasm or dilatation of cerebral arteries. It would seem that we need not even assume such immediate vascular changes as these, but that cerebral fatigue and temporary suspension of function, with return after a period of rest, may explain the attacks, especially after undue cerebral effort. In other words, the attack may result from the continued impairment of circulation with attendant faulty nutrition, rather than from a temporary change in the arteries.

The following case offers a striking example of these attacks, besides illustrating the temperamental factor in the so-called neurasthenic symptoms often ascribed to arteriosclerosis.

*Patient.*—A man aged 65, engaged in literary work, not naturally strong, but of a temperament prompting him to continuous effort, scrupulous, exact in business methods and prone to overdo. He carries his work with him and improves every moment, whether on the train or elsewhere.

*History.*—In early life, after working his way through college, he wore himself out in one year. At this time he had nervous dyspepsia. He rested from his work for a year in Europe, but overdid at that time physically in tramping and the like.

*History of Illness.*—Five years ago while dictating he found that he could not articulate. He does not think that he used the wrong words. At the end of an hour he tried again and found no further trouble. Three weeks later, after a strenuous game of golf, which he reluctantly discontinued to give a lecture, he tried to read a paper aloud and found he could not do so. The next morning he was all right. On another occasion some weeks later he had an attack of dizziness and reeling, accompanied by weakness of the left leg. He had taken no vacation for one and one-half years, and had worked nights, as well as days, according to his custom. At this time he was passing water more freely than before, but no definite signs of renal degeneration had appeared. There was no headache, even with the attacks. The arteries were atheromatous, the heart not definitely enlarged, the ophthalmoscopic examination was negative. Four years ago while dictating, he had a similar attack of inability to articulate. This passed off in about an hour and was followed by weakness. There was no headache, but some dizziness. On this occasion his right hand became numb half an hour after the speech defect. During this attack he could not think of the word and was not sure whether the right word was suggested. Two years ago examination of the fundus oculi (by Dr. Williams) showed albuminuric retinitis with hemorrhage, and examination of the urine showed signs of chronic interstitial nephritis. He now experienced exhaustion on playing a few holes of golf, and on one occasion his knees gave out. By this time he had reluctantly given up working under such high pressure, but still carried his bag of papers everywhere. There was some shortness of breath, no edema; occasional headache. During the past year he has had four attacks of aphasia, some lasting a few minutes, others lasting into the night, but disappearing before morning. In each of these attacks he could understand what was said to him, and could answer yes and no correctly, but could not find the words he wished. There has been temporary numbness in the left hand, accompanying the speech trouble, and sometimes a feeling of numbness about the mouth. (He is right-handed.) During the winter two years ago on starting to play golf he felt dizzy and found he could not hit the ball. Another person noticed that his face was very red. He lay down and in an hour was all right again.

Six months ago he came to my office, stating that he had worked very hard the day before, and that the night before he was so tired he could not talk, though he was not aphasic. I noticed that he talked slower than usual and sighed frequently, but he was not aphasic. His blood pressure was 230. His arteries were now markedly sclerotic and the cardiac dulness increased. After reaching home that night he felt dizzy as he entered the house and, on sitting down to supper, found he could not serve the family. Shortly after supper he found himself unable to carry on conversation or follow that of others, though he was conscious of his surroundings. By 9 o'clock he found he could express himself as well as usual.

This patient is still carrying on his extensive affairs successfully and is comparatively vigorous.

These ten attacks are evidently examples of claudication, and it is doubtful if actual rupture or other organic lesion has occurred in any of them.

His disposition has not changed in the least, there is no irritability, no emotional tendency nor other change of character. He is, as he has been all his life, careful, painstaking, perhaps over-methodical and over-conscientious in his devotion to detail.

In view of the recent studies of Marie, it is interesting to note the frequency of speech defect in his attacks of claudication, attacks accompanied in this case by disturbances of function in such varied parts of the body as to preclude any one constant seat of cerebral lesion.

(4) *Progressive Loss of Memory.*—This symptom was complained of in forty-eight of our cases, a sufficient number to place this symptom, like the general physical enfeeblement of involution, in the category of symptoms in the causation of which arteriosclerosis doubtless plays a part.

(5) *Insomnia.*—This has appeared in only thirty individuals, a sufficiently small proportion to place this symptom in the doubtful class and to cause us to look

further before accepting arteriosclerosis as the sole cause.

(6) *Irritability.*—Anxiety, morbid fears and allied symptoms have been present in forty of our patients. In nearly one-half of these cases the statement was made that these symptoms had been present throughout life and had not increased of late; in a number the statement was made that these tendencies had lessened. It was not unusual to find, coupled with a history of recent nervous breakdown, a further history of prior attacks of similar nature dating back even to early life. We feel, therefore, that further study should be given this branch of the subject before drawing final conclusions. When we remember that a majority of the patients examined were from the neurologic clinic, the number complaining of neurasthenic symptoms is not large and by no means establishes arteriosclerosis as the cause.

We feel that the constitutional element has been too little noted in so-called neurasthenia, a disturbance too readily attributed in middle life to overwork and overstress and in old age to such arterial changes as are bound to appear in any series of elderly persons. Careful and intimate study of the mental characteristics of so-called neurasthenics will generally disclose a constitutional tendency to morbid sensations, exaggerated fears regarding internal and external dangers, undue anxiety about trifles, over-conscientiousness in deciding on courses of action, undue insistence on the unessentials of life, intolerance of various sights, sounds and odors, with general incapacity for adjustment to surroundings. Such individuals are already more or less mentally exhausted before even commencing on the overwork to which they are prone and to which is popularly attributed the breakdown. In such cases, while immediate mental or physical effort may be the exciting cause, or rather the occasion, of the collapse, the underlying constitutional tendency, increased in many cases by toxic influences, is the essential cause. In other words, so-called neurasthenics, psychasthenics or phrenasthenics carry their stress with them.

These tendencies, if encouraged, are likely to increase in old age or, on the other hand, they may, and often do, lessen, because increasing experience favors a more philosophical view of life, and growing indifference dulls its irritating features. These are facts to be borne in mind before accepting, without further analysis, arteriosclerosis as the basis for the varied symptoms which have been included under the diagnosis neurasthenia.

Although no cases of senile dementia are included in our series the facts elicited have a certain bearing on this disease. It is obvious that not all the symptoms of senile dementia are traceable to arteriosclerosis, though the apoplectiform attacks and the vertigo may be directly attributed thereto. Arteriosclerosis is doubtless an important factor again in the loss of memory and other symptoms of mental and physical enfeeblement appearing in the period of involution. But the so-called neurasthenic symptoms, the insomnia, the hallucinatory and delusional tendencies, and the headaches if present, require further investigation in each case. In this investigation two important factors are to be borne in mind, namely, morbid constitutional tendency and toxic influences.

The following instances may be cited in illustration of the opportunity for analysis of such cases:

*Patient.*—A married woman, aged 68, has shown a moderately marked change in disposition for perhaps six months and has seemed more irritable than usual, somewhat suspicious, and inclined to exhibit a form of jealousy contrary to her previous habit. She has all her life been of a high-strung, worrying disposition, and has exhibited during the past year a marked degree of solicitude over a business matter. During the past year she has developed an unusual degree of restless energy, even for her.

*Examination.*—A week before the consultation she became comatose and remained so for perhaps a day. When seen she was oriented and recognized those about her, but there was distinct confusion and retardation of thought. Asked to add two and two, she makes no reply. The question being asked again, she finally says, "Is that Bessie's sample? I guess I must have forgot. You know they do the samples different from what they did when I was a girl." A coin was placed in her left hand and she was asked if she knew what it was. She made no reply for some time, but, on being urged, said she thought it was her watch. When told to put it in the other hand, no movement was made. Asked in what hand it is now, she did not reply, but finally answered, "I guess it is." Asked if she had headache, she did not answer. Finally she said, "I am not nutty, for I do not belong to a nutty family. Yester—yester—yesterday." The reflexes were normal; there was no paralysis. The pupils were alike, round and reacted to light. The urine was negative. There was no cardiac enlargement. The heart sounds were normal. The temperature was subnormal, 97.2 F. There was decided hardening of the arteries at the wrist. There was no history of dizzy attacks. Further questioning elicited the fact that for a long time she had been in the habit of using drugs for sleeplessness, for example, she is known to have used paregoric and laudanum.

It would hardly be doing justice to this case to attribute all these symptoms to atheroma. The worrying habit was constitutional. The moderate mental changes (suspicion, change of character) preceding the acute attack would indicate a certain degree of senility, perhaps the early symptoms of senile dementia. The attack of unconsciousness may well have been an instance of claudication, and, if so, the arteriosclerosis was its cause, as well as playing a part in the senile changes. But the lowering of temperature and the mental condition at the time of the examination strongly suggested some other etiologic factor, of which the most probable seemed drug poisoning. The suggestion of Leri must here be borne in mind, that certain senile changes represent a summation of gradually accumulating toxic influences. With regard to headache, it is to be noted that she complained of headache at times during this attack for the first time.

### RENAL AND CARDIAC CHANGES.

Opportunity was taken to analyze these cases with reference to the presence or absence of renal degeneration and cardiac enlargement, as well as to note the blood pressure under varying conditions.

Signs of renal degeneration (albumin, low specific gravity, increase in quantity, especially at night, with or without signs in the sediment), were present in 36 per cent. of the cases.

Cardiac enlargement was found in 86 per cent. of the cases in which renal involvement was present. In the cases without renal degeneration, cardiac enlargement was found in 36 per cent.

The average blood pressure (taken with the Riva Rocci instrument, 12 mm. band) was 147 in the cases with neither renal degeneration nor cardiac enlargement. In a few scattered cases only of this class the blood pressure was high, whether indicating involvement of the splanchnic arteries without demonstrable signs, we shall not venture to discuss.

In the cases with cardiac enlargement alone the average blood pressure was 168; in those with kidney disease alone it was 173.

In the cases showing both renal degeneration and cardiac enlargement the average blood pressure was 195.

These results show (1) that renal degeneration is the prominent factor in the production of cardiac enlargement; (2) that while either renal degeneration or cardiac enlargement is attended by moderately high blood pressure, the existence of both these conditions is accompanied by very high blood pressure.

### CONCLUSIONS.

This study would indicate that while arteriosclerosis is directly productive of apoplectiform attacks and of vertigo and that it plays a part in the loss of memory as well as of other failing powers of involution, it does not produce headache except as the immediate result of apoplectiform attacks.

Arteriosclerosis naturally appears in a certain proportion of elderly neurasthenics as in any group of elderly persons, but our observations fail to establish its causative influence, and we feel that further study of this branch of the question is desirable.

Renal degeneration is a prominent factor in the cardiac enlargement often present in cases of arteriosclerosis.

Arteriosclerosis without cardiac enlargement or renal degeneration is only exceptionally accompanied by a very high blood pressure.

If either cardiac enlargement or renal degeneration is present, moderately high blood pressure; if both are present, very high blood pressure, is the rule.

### DISCUSSION.

DR. ALFRED REGINALD ALLEN, Philadelphia, said that the question of high blood pressure in these cases of neurasthenia has interested him considerably. He uses a Stanton apparatus for the determination of the blood pressure, and has never used the Riva-Rocci apparatus. Dr. Allen asked Dr. Walton whether he remembers what was the diastolic blood pressure in his case. In one of Dr. Allen's cases there was a high systolic pressure, with a much higher diastolic pressure than one might expect under the given conditions. In this case the arteries on the wrist were just as pliable as a baby's.

DR. WILLIAM M. LESZYNSKY, New York City, has been using the Riva-Rocci manometer with an 8 cm. armlet for the last four or five years, and he has often found that in the presence of arteriosclerosis there may be either high or low blood pressure. In the majority of the cases, however, high blood pressure was one of the chief contributing causes of the arterial disease. The difference in the clinical manifestations in patients with high pressure and those with low pressure would, he thought, prove a fertile field for further study.

DR. BRADFORD C. LOVELAND, Syracuse, N. Y., thought that the clinical manifestations outlined in Dr. Walton's paper are of great practical importance. The end in view, after all, is to give patients relief, and unless we can get at something which will make that possible we are not getting what we wish. In regard to headaches in relation to these conditions of high blood pressure in arteriosclerosis, he said that arteriosclerosis may or may not produce headache, but his statistics show that there is a peculiar kind of headache associated with high blood pressure, which is sometimes met with in arteriosclerosis and which is relieved by diminution in the pressure. One of his patients had a tolerance for high blood pressure; it had existed for a long time, and was extreme, and was associated with distressing headache, which had existed for three weeks. The blood pressure was 305 on the Riva-Rocci. The patient became perfectly comfortable and remained so, with the blood pressure reduced by arterial dilators to about 285, and the headache did not occur with the blood pressure at 285 for nearly a year. Dr. Loveland has seen other instances, in which he was quite confident that there was arteriosclerosis, but no headache, and when a little complication of the blood pressure produced headache, it was relieved after the pressure had subsided. The character of the headache is different from the headache in eyestrain. It is a persistent headache, and sometimes associated with vertigo. The character of the vertigo does not differ from that occurring in the ordinary neurasthenic. It comes on suddenly and is relieved as soon as the pressure subsides, and it may come on at a time when the patient has been feeling perfectly well.

DR. C. C. HERSMANN, Pittsburg, Pa., for the past several years has been paying considerable attention to the blood pressure in puerperal insanities, where one can generally exclude sclerosis. The machine he uses registers 130 or thereabouts for normal. During the quiescent periods of these cases, the blood pressure was normal, and during the periods of excitement it varied from 170 to 180. So that it seemed to him that sclerosis is not the only cause of high blood pressure.

DR. JOHN K. MITCHELL, Philadelphia, was of the opinion that arteriosclerosis is not the only determining factor in producing increased blood pressure, nor age the chief one in causing arteriosclerosis. Quite recently a German observer was said to have discovered arteriosclerosis to be very common in children two years of age.

DR. GEORGE L. WALTON, Boston, said that the diastolic pressure was not taken in his cases, and that it seems generally accepted by those best qualified to judge that arteriosclerosis does not produce high pressure unless the splanchnic arteries are affected.

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## THE RELATION OF UPPER RESPIRATORY OBSTRUCTION TO ORAL DEFORMITY.

### AND SIMULTANEOUS TREATMENT BY EXPANSION OF THE DENTAL ARCH*

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It is with some hesitation that I undertake a consideration of the topic before the foremost medical and surgical body in the land. If the presentation develops valuable discussion, however, to the end that more definite conclusions may be reached, I shall feel that in accepting your committee's invitation to read a paper, I have done what every student should be willing to do, namely, to add my contribution to the interest and possibly to the help of others.

On consulting the literature on this subject as it has appeared in the journals and in the proceedings of societies, from time to time, I became impressed with the fact that I had undertaken a task which might well stagger the bravest.

More than fifteen years ago, some one suggested that dental irregularity might, in some instances, be due to interference in upper respiratory breathing, which results in mouth breathing. This thought formed the basis of an able and complete article by William A. Mills[1] before this Section of the American Medical Association.

The earliest reference to this point which I have, advocating the obstructive factor in the production of dental irregularity, appeared in 1892, in a paper by Norman W. Kingsley[2] where he cites cases in which he performed adenectomy prior to correction of irregularities of the teeth.

Following this, in 1893, A. W. Harlan[3] suggested

* Read in the Section on Stomatology of the American Medical Association at the Fifty-eighth Annual Session, June, 1907.

1. Dental Cosmos, 1897, p. 925.
2. Dental Cosmos, 1892, p. 16.
3. Dental Cosmos, 1893, p. 307.

that all obstructive and chronic catarrhal conditions of the nose and nasopharynx might be contributing causes of dental irregularity, and in his practice, at this time advised their preliminary treatment or removal.

The suggestions have been accepted, applied in the course of practice and the soundness of the doctrine abundantly proven by many practitioners since that time, until now it is natural for the orthodontist to enlist the services of the rhinologist in the treatment of dental irregularity complicated by upper respiratory obstruction. Nevertheless, a few have taken exception to this theory and have suggested the activity of other factors in the production of certain varieties of oral deformity.

In 1891, Wendell Phillips[4] considered heredity to be the chief determining factor in the production of dental irregularity, and stated that, in his experience, the effect of enlarged tonsils and adenoids, in the production of irregularities of the teeth is slight, unless the growths are so large as to cause complete obstruction.

In 1895, E. S. Talbot[5] expressed the opinion that: "Every case of adenoid growth will be found to be a case of degeneracy as shown by the want of development of the bones of the face and jaws." In the same year, George F. Eames[6] stated his belief that mouth breathing does not cause irregularities of the teeth. In 1901, C. S. Butler[7] stated that he has often found irregularities of the dental arches and adenoids coincident but not interdependent.

At about this time the possibility of improving the intranasal condition, through corrective measures applied to the teeth and dental arches was suggested. In a paper by Nelson W. Black[8] are reported cases in which satisfactory relief was obtained by expanding the maxilla in its lateral diameter. By this treatment the distorting force, which was the cause of the deflected septum, was supposed to have been relieved, the septum was allowed to grow straight, and the need for intranasal manipulation rendered unnecessary.

Two years later W. Pfaff[9] in a paper read before the fourth International Dental Congress at St. Louis, August, 1904, concluded after the examination of 2,000 skulls and 1,320 patients, that stenosis of the nasal cavity is practically always caused by contraction of the palate and abnormal position of the teeth. For both prevention and treatment of the intranasal condition he also advocated lateral expansion of the maxilla—conclusions which appear to be devoid of any value whatever.

Further references are unnecessary to show that there is now, as there always has been, marked diversity of opinion on what is practically the key to the whole situation—the relation of upper respiratory obstruction and mouth breathing to irregularities of the teeth and jaws.

Throughout the papers consulted, there runs a constant current of uncertainty, which frequently results in doubtful if not erroneous statements. These include surprising contradictions in the matter of etiology and diagnosis, some of which have been enumerated. Diverse methods of treatment are advocated without apparent regard for the fundamentals involved or the result desired. Thus in one instance we find adenoids and irregularity of the nasal septum referred to as one condition with a common method of treatment.

These and a host of minor errors and uncertainties, led me to formulate a series of questions designed to cover at least a few of the chief points of contention. Accordingly a set of questions, together with a letter requesting personal experience in the study and treatment of these conditions, were sent to a number of orthodontists.

The replies have been very gratifying. The answers, with few exceptions, being fully and carefully prepared, showing a desire on the part of the writers to aid in solving some of these vexing problems. The answers are of extreme practical interest, because they represent simultaneous reflection of the present trend of thought toward the study of the interrelation of nasal stenosis and the contracted high arch deformity.

To quote in detail the numerous valuable points contained in many of these replies would far exceed the space at my disposal. I shall confine myself therefore, to the merest outline, giving briefly a few important references, together with some of the conclusions derived from an analytic study of the series of answers.

The first result of this investigation, if it may so be called, has been to prove that but little advance has been made toward developing any very definite principles to serve as a working basis, in the treatment of these conditions, since the subject first attracted general attention. The general leaning seems still to be in favor of the obstructive origin of the contracted arch deformity, through the activity of the process of mouth breathing, and the resulting alterations in muscular antagonism and modifications in atmospheric pressure. In keeping with this belief, about 50 per cent. recommend preliminary or coincident surgical treatment of the obstructive condition as a prerequisite of successful orthodontia.

In answer to the question relative to the age at which it is most desirable to perform this operation, 75 per cent. of the correspondents chose a time between the fifth and seventh years, while the remaining 25 per cent. were willing to wait until early adolescence. In spite of this marked preference we find that circumstances alter cases and that the extremes of age in which successful operation has been accomplished lie between three years, one month, and forty-five years. The general average is approximately sixteen years.

Bearing on the interrelation of the high contracted arch deformity and respiratory obstruction, 73 per cent. of operators have found coincident nasal obstruction, in at least two-thirds of the cases while 37 per cent. believe it to be practically constant when properly looked for.

Of particular interest are the answers to the questions bearing on the effect of the expansion operation in the presence of upper respiratory obstruction. Only two correspondents express doubt as to the beneficial effect of such methods on the respiratory capacity of the nasal chambers, unless the operation produces definite separation of the two halves of the maxilla. That this definite separation of the two halves is rarely accomplished is amply shown by the summary of replies bearing on this point. Fifty per cent. of the orthodontists answering do not produce this separation because they deem it unnecessary to the attainment of satisfactory results; 33 per cent. produce such a change only in exceptional cases while from the replies of the remaining 16 per cent. no definite conclusions could be drawn. In spite of this, the majority believe that they have no difficulty

4. Dental Cosmos, 1891, p. 743.
5. Dental Cosmos, 1895, p. 864.
6. Dental Cosmos, 1895, p. 701.
7. Dental Cosmos, 1901, p. 408.
8. Am. Med., Feb. 15, 1902.
9. Dental Cosmos, 1905, p. 570.

in causing separation of the two halves of the maxilla without causing increase in the interproximal space.

I believe such a result to be both anatomically and mechanically impossible. We may liken the palate and alveolar processes, to a plane surrounded on three sides by a ridge through which passes the intermaxillary suture, dividing it into two parts. It will readily be seen that it is impossible to cause separation in the two halves of the plane without carrying laterally the ridge, resulting in separation in the median line at a point corresponding to the space between the central incisors. Any attempt to depress the center or to elevate the sides of the plane must result in some separation in the alveolar ridge.

It seems necessary then, in order actually to increase the nasal capacity, by lateral movement of the two halves of the maxilla, to cause evident and permanent increase of space between the central incisors. Any operation designed mechanically to increase the width of the nasal chambers, which does not show this separation, must of necessity fail to attain the desired result.

In the answers to the questions relative to the coincidence of respiratory obstruction and oral deformity, 50 per cent. have found this coexistence in at least 75 per cent. of cases, while 65 per cent. have found it in more than 30.

The majority believe adenoids to be the offending condition in at least 75 per cent. of cases presenting interference in nasal respiration, with irregularities of the septum, turbinal enlargement and polypi in this order of frequency. These findings are practically in accord with the experience of rhinologists under similar circumstances.

Contracted arch deformity occurs as a result of a variety of obstructive lesions. These differ markedly both in character and location, the most common being adenoid vegetations of the vault of the nasopharynx. This lesion practically never involves the nasal chambers proper.

In the presence of uncomplicated adenoids, any attempt to ameliorate the obstructive symptoms are destined to failure, because such treatment can in no way affect the growths themselves or their containing chamber; and also because any prosthetic result obtained in the correction of the oral deformity, without preliminary removal of the adenoid mass, is likely to be lost by return to the original deformed condition, through the continued activity of the distorting force after the restraint of the corrective appliance is removed.

The treatment of the contracted high arch deformity, in the presence of demonstrable adenoid enlargement, should always be preceded by adenectomy. In the presence of other complicating deformity within the nasal chambers, these should also receive appropriate preliminary treatment.

In considering the effect of expansion methods on deviations of the nasal septum, it does not seem to be definitely recognized that these are really irregularities of only a part of this structure. They usually involve only the cartilaginous portion, and even when the bony part is included in the deflection, this rarely extends throughout the entire width of the bone.[10] This fact has an important bearing on the success of this operation, as advocated by a number of practitioners at this time.

Septal irregularities have been classified in a great variety of ways. For convenience they may be considered as either simple or complicated: Simple, when they occur without appreciable thickening of the tissues; complicated when they combine the conditions of deflection and thickening amounting at times to spur formation of the convex side.

Expansion is believed by many to lower the floor of the nose, and, in so doing to relieve pressure and exert a downward tractive force on the deflected septum. In view of the above facts, it seems almost unnecessary to state that, even if the direction of such a force were possible, it would be effective only in the rare event of a simple complete deflection. For if a part of the septum be already straight, as it usually is, this will effectually resist any straightening force which might reach it through the alveolar and palate processes.

In the light of these facts, we must conclude that the field of applicability of a method simultaneously to correct the oral and nasal condition, is extremely limited, since we must exclude the two most frequent and important causes of upper respiratory obstruction: adenoids and deviations of the septum (90 per cent.).

It must be conceded then, that, in the majority of cases, if not in all, it is useless to argue in favor of any such method unless the definite aim of the operator is to produce separation of the two halves of the maxilla, thereby causing distinct outward movement of the outer walls of the nares and consequent increase in respiratory capacity, irrespective of the origin of the obstructive difficulty.

To accomplish this movement definitely and successfully, it would seem that the expansion arch is entirely inadequate. This arch as ordinarily used, implies a movable attachment to the teeth. This must necessarily allow the force to be largely expended on the crowns of the teeth, which will be moved outward as the bone is gradually absorbed from one side and deposited on the other; the apices remaining stationary or even moving in the opposite direction.

Overcoming in a great measure, this difficulty in the control of the expanding force is the split-plate or the plate with jack-screw attachments. These appliances make pressure more definite and apply it over a larger area of tissue so that the bones will move as a whole, if they move at all. The chief requirement of success in this operation is youth of the patient. With these appliances, undoubted and marked relief from diminished respiratory capacity may easily be obtained but it must be remembered, that such a result is obtained only at the expense of permanent separation between the upper central incisors. Such separation may be reduced or entirely overcome in the eruption of the permanent teeth. This operation is most successfully performed as soon as the existence of the contraction is noted, and is best done at or about the fifth year. Subsequent to the seventh year, as the bones become more fully developed and the suture more firmly united, the possibility of accomplishing this separation will gradually diminish until it becomes impossible through the complete development of the intermaxillary suture. To render this change permanent, existing postnasal obstruction should be removed.

To close this consideration of the subject at this juncture would undoubtedly leave the erroneous impression that most efforts to influence upper respiratory obstruction and mouth breathing favorably, through corrective measures applied to the teeth and

10. Bosworth: Diseases of the Nose and Throat, p. 158.

dental arches, are of little if any value. This would be the logical conclusion if the process were a purely mechanical one. On the contrary, we are dealing with vital tissues, possessing each a special function and capable of growth, repair and atrophy.

Space will admit only of brief mention of these factors and their relation to the problem of lateral expansion. It is a well-known physiologic fact that one of the most powerful stimuli to the proper development and normal function of any tissue or part, is the exercise of the specific function for which that tissue or part is intended. Conversely, the inability properly to perform this function invariably results in either imperfect development or wasting and atrophy.

It is natural then that we should find various alterations in the structure of parts of the whole upper respiratory tract. Thus may we account for the effect of adenoids, malocclusion, short-lip and tonsillar hypertrophy on normal nasal respiration and the production of the inevitable train of disturbances accompanying imperfect development of the bones of the face, particularly the maxilla and those forming the nasal passages.

This also explains why the removal of exciting causes and the correction of existing deformities of contiguous parts gradually brings about a resumption of growth in these tissues, resulting in the production of normal nasal chambers and the return of normal nasal respiration.

Possibly of equal importance in contributing to improvement after most corrective measures, is cell stimulation and renewed growth in the maxillary bones, through the irritation caused by the varying degrees of pressure applied to the teeth and alveolar arches. The extent to which this process may be operative is a matter not easily determined and how far these two factors influence the conditions in a given case to the exclusion of others, we are, as yet, unable to determine, since up to the present time no practical or sufficiently accurate methods of observing and recording these changes have been devised.

Without doubt, many of the results which have been attributed solely to the effect of definite movement of bone, and the resulting improvement in the respiratory capacity of the nasal chambers, are in reality instances of the beneficial results of stimulation of these vital functions.

From my study of the subject a few points have particularly impressed themselves on my mind:

1. The etiology of the general subject of dental irregularity and particularly the interrelation of such deformity and chronic respiratory disturbances is still lacking a definite basis. This matter should receive particular attention at the hands of every orthodontist.

2. Dental irregularitiy in the vast majority of instances is associated with, if not dependent on, upper respiratory obstruction.

3. Dental practitioners and particularly orthodontists, should be more familiar with the common forms of upper respiratory obstruction, their symptoms, diagnosis and treatment.

4. The comparative study of the changes brought about through corrective procedures, should be more carefully studied, and more accurate methods of measuring and recording them devised.

5. The rational treatment of dental irregularity should include preliminary examination and treatment of the nasal chambers and pharynx.

6. The result of the ordinary expansion operation on nasal conditions is more dependent on vital tissue in the nasal region, than on mere mechanical movement.

7. Operations designed mechanically to increase the respiratory capacity of the nasal passages are practically valueless unless the intermaxillary suture is separated, as shown by increase of space between the central incisors.

8. It is impossible to relieve stenosis due to adenoids or septal irregularities by expansion methods.

9. Adenoids and deviations of the septum should receive the usual treatment at the hands of the rhinologists prior to the correction of dental irregularity.

10. The stimulation of vital forces and renewed growth in the nasal chambers, together with the restoration of normal conditions in contiguous parts are the chief causes of improvement following the expansion operation.

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## DISCUSSION.

DR. G. HUDSON MAKUEN, Philadelphia, said that so far as he understood the subject of orthodontia, he agreed with Dr. Faught's conclusions. His attention, he said, was first called to this subject when he found that the removal of adenoids and nasal obstructions did not always correct mouth-breathing; that after he had made it possible for patients to breathe through the nose, they continued to breathe through the mouth. In these cases the trouble was generally found to be due to some malarticulation of the teeth, which made it difficult for the patient to hold the mouth closed, or made it necessary for him to use semiconscious effort to hold the lips together. Children, or even grown people, if they have to close the lips with a conscious effort, will not keep them closed and mouth-breathing will be the result. In regard to the etiology of dental irregularities and nasal obstructions, Dr. Makuen has often wondered, in many instances, whether it is the nasal obstructions that cause the dental irregularities in young people, or whether it is the dental irregularities that cause the nasal obstructions. However, he is convinced that those persons who find it difficult to keep the mouth closed, or who find it necessary to think about keeping the mouth closed, and who therefore breathe through the mouth, generally have some nasal obstruction; and he has found that adenoids, for instance, will return in mouth-breathers. The adenoid vegetations may be removed, and yet if there is nasal obstruction, or if the patient can not close him mouth on account of dental irregularities, the small remnants of adenoid tissue which always remain will become hypertrophied, and there is a return of the adenoids. The turbinal bones will also become hypertrophied as a result of faulty nasal respiration. There will be, in the case of nasal obstruction, a kind of suction action going on in the nasopharynx, drawing blood to the parts and helping to increase the size of the tonsillar masses behind the palate and in the pharynx, and in this way adenoids will often return if at the time of removing the adenoids it is not made possible for the patient to breathe through the mouth.

DR. G. V. I. BROWN, Milwaukee, Wis., stated that Dr. Nelson M. Black, a rhinologist, and he had expanded those arches, and that Dr. Black has been doing that same thing for about ten years. The case reported in that paper was a very interesting one, but not in accord with Dr. Faught's own conclusions. The patient was 30 years old, and in addition to the nasal and aural complications which had come from nasal stenosis, had certain other associated nervous conditions. She came to Dr. Black from an insane asylum, and from Dr. Black she went to Dr. Brown. They were able in two weeks to widen that nose sufficiently to permit catheterization of the Eustachian tube. The patient also improved otherwise. Dr. Brown suggested that dentists make use of as few appliances as possible in these cases, not cumbering themselves with plates and springs and various other things. Dr. Brown stated that

what had been explained by Dr. Makuen as to the tendency of adenoids to recur if there is not proper opportunity for regular nasal breathing and proper oxygenation, is, of course, in line with the experience of many in that respect. But, he continued, if any one will examine the nasal passages in the tonsillar regions of patients with cleft palates, with complete and ample avenue for passage of air, he will find great masses of tonsil tissue and adenoid vegetations distributed throughout that same region. So that there is, primarily, in these cases, a well-developed tendency to irregularity. That tendency, he said, is responsible, alike for adenoids, for enlarged tonsils, for irregularities, and arrest of development, maxillary and dental. All the forces which have to do with the development of that region, are, of course, affected one way or the other. Back of it all there is the primary cause. Dr. Brown has found that in his work he would be helpless without the cooperation of the rhinologist.

DR. J. A. GORMAN, Philadelphia, said that with the modern appliances and treatment, he could see no use of causing a separation of this suture, nor did he believe that it is necessary to obtain it. He asked Dr. Brown how, after he obtains the separation he thinks he has, is he going to retain it. Not only that, but with those outer plates of alveolar process which are very thin and with that immense pressure, he will certainly tip those teeth out, or buccally, which leaves their roots to incline in. But instead, by taking accurate plaster impressions, and making accurate models before and after, and with the use of the modern expansion arch, the crown of the teeth will incline buccally, and then in a few years, the roots of those teeth have certainly tilted buccally and there is no separation of the suture to do it. Dr. Gorman agreed with Dr. Faught that it is most important to consult with the rhinologist. Every orthodontist, he said, ought to know more about rhinology than he does, not to practice it, but to be familiar with it and notice every case that comes to him. And every dentist ought to know a great deal more about rhinology, so they could save children a great deal of their troubles of mal-occlusion. It is most important always to remove the adenoids or any postnasal obstruction before operation for mal-occlusion.

DR. C. A. HAWLEY, Columbus, Ohio, referring to the separation of the maxillary sinus, said, there can be no question but that we get practically the same result without the separation of the sinus, though it may not be an important matter either way. If it was a matter of appliances, those who work with an expansion arch certainly do get as much improvement in respiration. Probably it is not due entirely to mechanical enlargement, but to a stimulation of the vital functions, and that process is preferable. It is a very interesting thing, he said, to note that the improvement in nasal breathing is not always dependent on the extent of the expansion. That would indicate that it is not entirely a mechanical method, but a stimulation of the vital forces and renewed growth. Dr. Hawley thinks there is an irritation and stimulation that comes from the mechanical means used.

There are some interesting things with regard to the relation of nasopharyngeal trouble to defective arches, that he has noted. In cases where the central incisors are erupted, and where adenoids or nasal obstructions are not very evident, he has been able, in almost every case, to diagnose some kind of nasal obstruction, simply from the lack of width of the dental arches. Almost invariably some nasal disturbance is found by the rhinologist.

DR. E. A. BOGUE, New York City, thought that Dr. Brown and Dr. Faught were both thinking of adult life, while others were thinking of child life. He was convinced that every one has separated the two halves of the maxilla, knowing it would not be a permanent thing, but that in time they would come back again, because if there is complete articulation of the thirty-two teeth in the mouth, or twenty-eight, leaving out the wisdom teeth, those teeth are going to just fit the arches and there is not going to be a great separation in front, as a rule. Certain families, he said, show the distinctive characteristic of the separation of incisors, but he has not yet carefully gone over the measurements to know accurately why those incisors remain separated all through life. He agreed with Dr. Hawley that if the dental arches are found to be very undeveloped, which means narrow, almost always one nearly always finds adenoids in connection with those narrow arches.

DR. FRANCIS A. FAUGHT, Philadelphia, answering Dr. Makuen about etiology and the recurrence of adenoids even after complete removal, said that he did not attempt to draw conclusions in regard to etiology. He merely intended to bring about a discussion, so that some points in doubt and not settled, would be settled. As bearing on some of the remarks made by Dr. Brown, Dr. Faught cited the case of a patient who gave a very full history. He was an active adult, about 26 years of age, who had been in the care of a dentist, his brother-in-law, for about seventeen years. He had models of his teeth at the age of 17, which showed practically normal arches, with normal occlusion. He played football and met with an accident in which there was considerable crushing of the nose and septum. This was treated at one of the hospitals, but the result was a failure. He then had practically complete occlusion on one side, with marked diminution of respiratory capacity on the other. He came to Dr. Faught at the instance of his dentist, who had noted that the patient was developing a markedly contracted upper arch. On examination Dr. Faught found there was a large part of the septum which could be removed with advantage, and which would relieve the nasal occlusion to a great extent. This he removed, with the return of respiration on the one side and some improvement on the other, due, he thought, to alterations in the blood supply and more normal aëration. Here was a case where up to a certain period the arches were normal, and where subsequently contraction developed. Surely, he said, that was because of the obstruction in the nose.

Dr. Faught agreed with Dr. Hawley's remark that he could not see what difference it made whether or not we got separation between the central incisors, so long as we got improvement in the nasal capacity, but he did not believe, that, anatomically, we can improve the capacity of the nasal chambers with expansion, except we separate this suture, for the reason that we are operating on structures, which, as compared with other parts of the jaw, the alveolars, are exceedingly thick. He suggested that the results in those cases were due, not so much to the expansion, as to the restoration of the function of the teeth. By the movement of the teeth themselves, in the alveolar processes and the stimulation of the vital functions in this region, if the nasal chambers perform their function they will be developed along normal lines, even if that had been delayed for a number of years. In regard to the permanence of the separation, he stated that in the first part of the paper he was dealing with adults, although he did not so state. Subsequently he stated that in the case of children, after complete articulation of all the teeth, this separation would be reduced as normal occlusion was developed and the secondary teeth erupted in place of the primary teeth. In this event we have only preceded Nature in an effort to produce proper development of the upper maxilla, which had been delayed by some cause unknown. In other words, we expand the maxilla to make space, and then Nature comes along with the proper teeth at the proper time, when the permanent teeth are developed.

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**Canaries Are Next Under the Ban.**—According to Dr. Tucker Wise of Montreal, tuberculous affections of birds are transmissible to the human subject, and he fortifies his opinion by brief accounts of 33 cases in which infection appeared from pet birds. Caged birds, says Wise, such as canaries, pigeons and parrots, lead a life calculated to render them an easy prey to tuberculosis, and the way in which they are managed in the household conduces powerfully to their spreading the infection to the members of the family. The bird's excrement is disseminated by the fluttering of its wings, and particles of it are carried by flies to articles of food. How widespread is the danger of the conveyance of disease from birds to man may be judged of by the fact that in England 400,000 canary birds are sold annually.—*New York Medical Journal.*

# SUBACUTE POLYMYOSITIS. WITH A REPORT OF THREE CASES.

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It was not until the year 1887 that the disease polymyositis was accurately described. In that year Unverricht,[1] Hepp,[2] and E. Wagner[3] described cases which have since served as examples of the severe type of this disease. Many physicians have been slow to accept the fact that inflammation of muscles may occur diffusely over the body and constitute a distinct disease, it being long held that muscle became inflamed only from local causes. The recent accumulation of cases, though not great in number, in which general swelling and tenderness of the muscles was the prominent symptom leaves little room for doubt that they form types of a particular constitutional disease. For some years the severe form of the disease alone was recognized, but more recently attention has been called to milder types which heretofore have probably escaped notice by being designated as rheumatism, synovitis, etc. While this is not strictly a neurologic disease, a considerable proportion of the cases have been brought to light by neurologists.

## SYMPTOMATOLOGY.

The onset of the disease is usually insidious and gradual, though rarely a case has been reported where the onset was acute with high temperature. A general feeling of malaise and fatigue composes the typical and early symptoms. Occasionally there are mild gastric symptoms with anorexia, nausea and some headache. Within a few days the symptoms become more localized and the patient complains of soreness in the muscles when the extremities are used, occurring rather earlier in the arms. The soreness increases and is often attended by cramps in the muscles. Movement becomes more difficult and produces great fatigue.

Objective symptoms soon manifest themselves. The subcutaneous tissue becomes swollen not only over the most affected muscles but in any part of the body where the skin is not tightly bound down. This edematous swelling may become very marked, even obliterating the natural contour of a limb. It is usually less toward the extremities of the limbs. Edema of the eyelids and face has occasionally been marked. This edema is apparently of inflammatory origin, for it does not pit on pressure and often shows a marked peculiar redness not unlike that seen in erysipelas.

Palpation of the muscles is difficult when this edema is marked, but on its subsidence it is found that the muscles do not feel normal. Their consistency is either hard and distended, tough and inelastic or, more rarely, soft and doughy. Different parts of a muscle may be of variable firmness, comparable to a hobnail liver. After a time the infiltration and consequent shortening of the muscles bring about an approximation of the two ends. In this manner movable parts like the extremities become drawn up at the joints and we get the characteristic attitude of flexed arms and legs in the later stages of the disease. Atrophy naturally follows the destructive process in the muscle and is a prominent feature in chronic cases.

Tenderness of the muscles to pressure is marked in the acute stage, in fact it is difficult to determine whether there is also involvement of the nerve trunks so general is the tenderness. It is considered that the nerves are not involved in a pure case, though polyneuritis and myositis may occur together. The superficial reflexes are all present unless interfered with by a marked edema. The deep reflexes vary with the severity and locality of the muscular involvement, the later stages of the disease causing greater interference with the tendon reflexes. The same rule holds as regards electrical excitability, the reaction being normal until the muscle has undergone marked change, when gradual diminution and finally abolition of excitability ensue. Fine muscular twitchings are absent. An hyperidrosis of the affected part often occurs.

In general it may be said that the muscles become affected in sequence, the extremities, the muscles of abdomen, neck, chest and finally the throat are involved. The latter paralysis allows the passage of saliva, etc., to the trachea, fostering the development of lung complications which so often form the closing scene in this disease. To the last, consciousness is retained and brain symptoms are absent. The temperature and pulse are both raised, sometimes to high degree during the acute stages, though mild cases may show little or no increase of temperature. The urine shows no characteristic change, though cases with albuminuria have been reported. The blood is usually normal, though there have been several cases with accompanying secondary anemia. The leucocytes are seldom increased in number. There is no eosinophilia.

The course of the disease is very variable, so much so that some authors have made subdivisions into acute, subacute and chronic polymyositis. The subacute course is the most typical. There occur, however, periods of remission in the disease which are apt to deceive the observer. The fatal cases average two or three months in duration, the milder cases may go on for many months before recovery takes place.

## ETIOLOGY.

Unfortunately here one can only deal with probabilities. The belief is general that the disease is of infectious origin, but the definite proof is lacking. It must be said that attempts to discover bacteria in the tissues usually meet with failure and cultures taken are usually sterile. Bacialli[4] and Georgievski,[5] however, both report cases where the *Staphylococcus albus* was obtained from cultures either of blood or muscle. Bauer[6] also found the *Staphylococcus aureus* once. The failure to find bacteria has led to the supposition that some toxic substance was the cause of myositis. Definite information for or against this idea is lacking. Pfeiffer[7] believed the cause was a protozoön, a sporozoön of the group *Gregarinæ*. He failed to find it, however, in specimens submitted by Strümpell[8] and Unverricht.

1. Ueber eine eigenthümliche Form von acuten Muskelentzündung mit einem Trichinose ahnelnden des Krankheitsbilde, Münch. med. Wochschr., 1887, xxxiv, 488.

2. Ueber Pseudo-trichinose, eine besondere Form von acuter parenchymatöser Polymyositis, Berl. klin. Wochschr., 1887, xxiv, 297 and 322.

3. Ein Fall von acuter Polymyositis, Deutsch. Arch. f. klin. Med., Leipzig, 1886-7, xl, 241.

4. Contribuzione allo studio della patogensi e delle alterazione istologiche del tessuto musculare nella polimiosite acuta primaria, Il Policlin., 1902, ix, 16.

5. A Case of Acute Hemorrhagic Polymyositis, Bolnitsch. Gaz. Botkina, 1900, xii, 696; also, reference in Boston Med. and Surg. Jour., 1902, cxvii, 313.

6. Ein Fall von acuter hämorrhagischer Polymyositis, Deutsch. Arch. f. klin. Med., 1899, lxvi, 95.

7. Die Unverricht'sche Polymyositis gregarinosa oder Dermatomycosis acuta, Die Protozoön als Krankheitserreger, Jena, 1891, ii, 208.

8. Zur Kenntniss der primären acuten Polymyositis, Deutsche Ztschr. f. Nervenh., 1891, i, 479.

The argument in favor of an infectious origin is strengthened by the onset with malaise, the fever and the oft-occurring splenic enlargement. Cases reported by Herz[9] and Lewy[10] suggest not only the infectious but also the contagious nature of the disease. Herz describes two mild cases in girls occupying the same room, one case slightly preceding the other. Lewy made a diagnosis of polymyositis in three members of the same family.

Age and sex apparently have no bearing on etiology. In 1895 Jacoby[11] wrote that two-thirds of the published cases had been males. All ages had been affected except childhood. Since then five cases have been reported in children, two following some infectious process.

### PATHOLOGY.

The postmortem findings in these cases are variable, depending largely on the stage of the process. A majority of the cases, however, have reached the later or destructive stage, the early or inflammatory stage being less in evidence except when a specimen of muscle is removed during life. The signs of inflammation, including swelling, infiltration, transudation and hemorrhage, are found early, affecting largely the connective tissue, in part the parenchyma. It is characteristic of the disease that certain bundles and certain fibers of a bundle are unaffected by the process. With the progress of the disease attempts at regeneration are commonly seen in the great increase of nuclei, including mitotic forms, while at the same time the anatomic picture of destruction of fibers is prominently seen. This appears as granular and, later, waxy degeneration of the fibers; vacuolation, a great increase of cells and fat globules, greatly thickened perimysium becoming myxomatous or fibrous in structure, in fact a tendency to the embodiment of the former specific tissue into a connective tissue structure.

The nerves have been shown to be involved in a number of cases, notably those of Senator,[12] but from their distribution and from the considerable number of normal fibers found in the sections it seems probable that the process is not primary in the nerves. The amount of hemorrhage between the muscle bundles is variable. It may be very great, predominating in the sections and giving rise to the name polymyositis hemorrhagica (Lorenz[13]).

### DIAGNOSIS.

Once one's attention has been drawn to this disease he will seldom fail to make the diagnosis. The differentiation from trichinosis and from polyneuritis presents the chief difficulties. Other affections that at times resemble this condition are phlebitis, periostitis and osteomyelitis, rheumatism and pyemic abscesses.

Leube[14] and other diagnosticians say that it is impossible to distinguish polymyositis from trichinosis by the symptoms alone, an examination of specimens of muscle being necessary. Since 1897, however, when Brown[15] called attention to the constituents of the blood in trichinosis, especially the eosinophilia, we have had a most valuable yet unheralded aid to diagnosis. The accumulated evidence goes to show that cases of trichinosis have constantly an increase of eosinophiles of from 10 to 50 per cent. with a corresponding decrease of the neutrophiles. I have seen the report of no such blood count in polymyositis, in fact the differential count is usually normal. Leucocytosis, too, is more common in trichinosis. A history of eating uncooked pork, of course, points to trichinosis. Primary gastric and intestinal symptoms and involvement of the muscles of the eye and diaphragm are more characteristic of trichinosis.

As against a polyneuritis the fact which points toward a polymyositis are: Tenderness over the affected muscles rather than along particular nerves. Inflammatory edema involving both the muscles and the cutaneous tissues. Absence of anesthesia or paresthesia. The muscular swelling followed after a considerable time by atrophy, often with contracture.

It happens that the mechanical interference with the reflexes and electric reactions found in polymyositis may at times closely resemble the changes found in polyneuritis, thus rendering them of uncertain value in differential diagnosis. It must be remembered also that the two affections may be associated.

Syphilitic myositis is another rare affection that may be mistaken for polymyositis. It occurs in three forms —the gummous, the diffuse and the combined (Herrick[16]). It is accompanied by evidences of syphilitic infection, usually affects only a small number of muscles, and has not the splenic tumor or the exanthem of polymyositis.

### PROGNOSIS.

The prognosis, formerly almost always regarded as fatal, now has to be modified with the recognition of the milder cases. The more general the involvement of the muscles and cutaneous tissues, with a persistent temperature, the graver the prognosis. The most dangerous single symptom is involvement of the muscles of deglutition, whereby the saliva is not diverted from the respiratory tract and lung complications occur. Myocardial involvement, though rare, adds greatly to the danger. Long drawn-out cases tending to recovery are apt to leave some muscles permanently atrophied.

### TREATMENT.

Attempts to cut short the course of the disease by any specific form of treatment have heretofore been of little avail. Antipyretics and salicylates have somewhat relieved the pain and soreness of the early stages. Hot baths and fomentations had been moderately used before, but in 1903 Oppenheim[17] came forth with glowing accounts of five cases which led him to advocate confidently the systematic use of diaphoresis. His method is to apply hot air, then wrap in blankets, giving hot drinks and aspirin. The patient is thus sweated for an hour at least every second day. Thermomassage is used on the alternate day. Later simple massage and electricity are used.

Oppenheim considered this treatment a great factor in the recovery of his cases, though it did not serve me as well in the one case on which I had an opportunity to try it. The test of time will alone determine its value.

9. Ueber gutartige Fälle von Dermatomyositis, Deutsche med. Wochschr., 1894, xx, 790.
10. Zur Lehre von der primären acuten Polymyositis, Berl. klin. Wochschr., 1893, xxx, 475.
11. Subacute progressive Polymyositis, Jour. Nerv. and Ment. Dis., xv, 697.
12. Ueber acute Polymyositis und Neuromyositis, Deutsche med. Wochschr., 1893, xix, 933.
13. Die Muskelerkrankungen, Wien, 1898, 120.
14. Medical Diagnosis, translation of sixth German edition, 1904, 769.
15. Studies on Trichinosis, Johns Hopkins Hosp. Bull., 1897, viii, 79.
16. Polymyositis acuta, with report of a case presumably of syphilitic origin, Amer. Jour. Med. Sc., 1896, cxi, 414.
17. Ueber die Polymyositis, Berlin klin Wochschr., 1903, xl, 381 and 416.

My cases will now be presented in the order of their occurrence:

CASE 1.—*History.*—On June 11, 1904, Dr. G. S. Clark asked me to see a boy 15 years old who presented the following history. He was a member of a healthy English family which included nine other children. The family were characteristically small of stature, this boy who had grown rapidly in the last two years being rather the largest of the family. The patient had been well up to six months previously when it was said that he fell on the ice striking the lower end of his coccyx. No particular complaint was made at the time and no paralysis ensued but within a few days it was remarked that the boy was less energetic and more easily tired. Sometime later it became difficult to make the boy do chores as bringing up wood or carrying water, he complaining of soreness in the muscles of the back and arms. Six weeks before I saw him the eyelids began to swell, then the face, especially the upper lip. Both arms and hands then became edematous, stiff and tender to pressure, though there was no real pain. This edema gradually extended to the back, abdomen and legs until at the time of my visit there was practically complete anasarca. Muscular weakness had been progressive so that the boy could sit up but little and could scarcely stand alone. There had been no sphincter disturbance at any time. The knee-jerks were said to have been absent for one month. At no time had there been any gastric disturbance. The appetite had been good and the bowels regular. Slight trouble with swallowing solid food developed a week previously; since then the diet had been liquid and semi-solid. The temperature when taken had been found to be from 99 to 100 F.

*Examination.*—Physical examination showed the boy to be well developed and apparently well nourished. Anasarca was complete except for the plantar surfaces of the feet. The edema was especially marked over the face and buttock, the projection of the eyelids being fully one half inch and cutting out all light from the eyes. No discoloration or rash was present of the skin. Mucous membranes had fairly good color. On palpation the skin did not pit as was expected on pressure, the muscles were moderately tender and felt boggy. The large flexor muscles especially felt tense and of irregular hardness. The muscles along the upper part of the spine were very tense. There was little or no impairment of tactile sensation. Pain and muscle senses were also normal. There was some hyperesthesia especially along the spine. The right pupil was very slightly larger than the left but both reacted normally to light and distance. The patella reflexes were lost as were also all the superficial and deep reflexes except the plantar which was normal. The Babinski reflex was absent. The heart was not enlarged and the sounds were normal except for a slight bruit in the neck. On exertion the heart became very rapid causing some dyspnea. The urine was normal. The boy was mentally clear. Blood examination showed 60 per cent. hemoglobin. No increase of eosinophiles or white cells and no abnormal forms of red cells.

*Diagnosis.*—The tentative diagnosis of polyneuromyositis was made and a grave prognosis given.

*Subsequent History.*—The patient was next seen July 26 During the interval he had been on a liberal semi-solid diet and a preparation of iron, arsenic and strychnin. In good weather, too, he had been carried outdoors and had spent much of the day under a tent. One month ago the edema began to disappear, beginning at the upper part of the body, until four days ago it was absent. There had been marked disturbance with the muscles of deglutition until three weeks previously but since then considerable improvement in that respect. The arms and legs had become more flexed so that walking was impossible. The appetite was still good. Examination of the muscles showed that they had lost their boggy feel and were much thinner than before. The biceps and hamstring muscles, especially, were shortened and felt hard and fibrous. The reflexes were the same as at the last visit. There was now no skin hyperesthesia. There was considerable tenderness of the flexor muscles of the arms and legs and slight edema especially about the ankles. This might possibly have been due to the fact that the attending physician had allowed more vigorous massage for the last three days. At my final visit September 10, I found that during August there had been apparent improvement in the use of the arms but in all other respects the boy had gradually grown weaker. There had been steady and gradual wasting of the muscles and flesh over his whole body. In fact I never saw a more striking contrast than the pathologically plump figure of June 11 and the shrunken skin-covered skeleton of September 10. The legs and arms were drawn to right angles and the affected muscles felt only like shrivelled cords. The patient was scarcely able to move any muscles except those of the neck and face. The scalp and skin were dry and scaly and there was marked alopecia, especially at the sides of the head. Saliva collected and ran out of the mouth for it could not be swallowed. There had been increasing difficulty in nourishing the boy, and now for three days it had been impossible to move the bowels. The heart was rapid, with no murmurs. The lungs were clear. Nothing abnormal was found on palpation of the abdomen. After this visit the patient is said to have failed steadily, retaining his consciousness, until he died of respiratory failure two days later, September 12, 1904. It is to be deplored that the attending physician was unable to get permission for an autopsy.

CASE 2.—*History.*—Mrs. O., aged 30, the mother of three healthy children. Her parents both died in late middle life, the father of "brain fever," the mother of pneumonia. She has three sisters who are well and one who has suffered for a year with inflammatory rheumatism. The patient has generally been well except for attacks of diphtheria at 20 years and bronchitis at 25 years. From each of these she made a good recovery. On April 9, 1904, just as her husband was recovering from an attack of the grip which had kept him in the house two weeks, the patient first noticed aching pains becoming general over the body. There was no disturbance of the stomach, and Mrs. O. asserted that she had eaten no pork for a long time. Headache and any marked feverishness were absent. The patient felt tired all of the time but kept about. At the end of a week some swelling occurred about the eyelids and upper part of cheek and rapidly extended over shoulders, back, arms and legs. The swelling was brawny and did not pit on pressure. The feet did not swell but the hands were swollen even to the finger tips, where there was some formation of pus about the nails. Within a few days, the soreness of the muscles persisting, the patient found she was unable to lift up or hold her baby, and if she stooped, bending her knees, she was in danger of falling. Within two or three weeks the swelling had largely disappeared except about the flexor muscles of the arms and legs. At about this time the muscles of deglutition became affected so that only liquids could be swallowed without difficulty. The impairment of function in these muscles did not lead to further serious symptoms and their power gradually returned in a few weeks. Dr. S. B. Woodward, who had charge of the case in June, always found some elevation of temperature, the highest being 102 F., and advised her removal to a hospital. From June 24, to August 16, Mrs. O. was a patient at Memorial Hospital on the service of Dr. R. W. Greene. At Dr. Greene's request I saw the patient early in July.

*Examination.*—She was of medium height and well nourished, did not appear to be very ill and was not confined to her bed. Color was good. Skin dry and rather scaly. Scalp poorly nourished and hair falling out. Arms were held partly flexed and could not be fully extended. Attempts to do so produced pain and brought into relief the biceps muscles which were of irregular, abnormal hardness. The surface temperature over these muscles was evidently increased. The cutaneous tissues were somewhat swollen. The supinators, especially the left, were similarly affected. The flexors of the legs were also hard, thickened and apparently shortened so that complete extension was painful. There was some swelling and tenderness too, above the knees in front. Sensation was everywhere unimpaired. The pupils were equal and reacted normally to light and distance. The elbow jerk was present but slight. Knee-jerk not obtained on either side. Achilles reaction normal. No ankle clonus. No Babinski reflex. Superficial reflexes were present but not increased. An electrical examination was not made at this time. The affected muscles did not

react to mechanical stimuli. There was no paralysis but lessened power in the flexor muscles of the arms and the flexors and extensors of the legs. The urine at this time was normal in color, sp. gr. 1,020. No albumin or sugar. Blood examination showed: Hemoglobin, 80 per cent.; reds 4,365,000; leucocytes 8,000. Differential count normal, no eosinophilia being present. During the patient's stay in the hospital she was under no specific treatment. She was given general tonics and occasionally the static breeze. She took moderate exercise in open air. About a week after entrance the quantity of urine was somewhat less and an occasional hyaline cast appeared in the urine. Probably on this account she was kept on a vegetable diet during the rest of her stay. In August, having made no improvement, she was taken by the interne to consult a leading physician in Boston. This physician wrote his opinion that the case resembled trichinosis, but the course of the disease and the normal blood examination were against this diagnosis. He inclined to regard it as a peculiar type of polyneuritis. He recommended examining a piece of muscle and advised general tonic treatment. Two weeks later the patient was discharged from the hospital unimproved. September 2, Mrs. O. came to the neurologic department of the City Hospital and consented to the removal of a piece of muscle. Under primary ether the House Surgeon removed a piece of the left biceps muscle 2 cm. long by 1 cm. in thickness. In cutting, the muscle felt decidedly tough and it bled more than normal. One catgut stitch closed the muscle edges, and three of silkworm gut closed the skin. Part of the specimen was put in Zenker's fluid and part in alcohol. The gross specimens appeared mottled; gray and red. For the subsequent pathologic report I am indebted to Dr. Hunt.

*Pathologic Examination.*—In the main the sections showed little departure from normal striated muscle. In several, however, there appeared a few areas of hemorrhage and of round-cell infiltration into the perimysium extending along endomysium into peripheries of the neighboring muscle fasciculi, where the muscle fibers showed varying degrees of disintegration and hyalin change. Many fibers showed a separation of fibrillæ, took the stain poorly and were penetrated by round cells; while others were dense and homogenous, showed no striation, and stained deeply with eosin. Sections stained by Loeffler and Gram-Weigert methods showed no bacteria nor parasites.

*Pathologic Diagnosis.*—Non-suppurative, hemorrhagic interstitial myositis.

*Subsequent History.*—The patient was given quinin bisulphate 5 grains three times daily and put on a full nitrogenous diet. The examination at this time showed no marked change from two months before, though the knee-jerks were more easily obtainable. There was very marked alopecia. The wound of the arm healed by first intention and the stitches were removed. I did not see the patient again until October 27. She had been keeping on with the treatment but on account of illness in the family had been unable to follow directions about resting. She was taking care of her house and three children. In spite of this she seemed to have improved. The skin was much less dry. The hair was growing in thickly. The arms could be extended almost fully without pain. The supinators had apparently lost their induration. Flexors of legs and biceps were still involved and were tender to deep pressure. All the muscles reacted readily to the faradic current but there was no abnormal irritability. The patient's appetite improved and she had menstruated for the first time during this illness, except for a slight trace in July. Gradually the stiffness and weakness of the arms and legs disappeared and she was able to attend to her household duties. She passed through a normal pregnancy and had a healthy child born June 28, 1905. There has been no recurrence of her trouble.

CASE 3.—*History.*—The patient in this case was a Swede, 31 years old and married, who was said to have been the strongest man in the wire mill, of which he was foreman. He was referred to me by Dr. W. H. Rose and gave this history. There was no trace of chronic illness in the family and, except for an attack of malaria a year previous, the patient remained well up to August, 1904. At about this time, without any history of digestive trouble, he began to complain of lameness and soreness in anterior aspect of both thighs. A little later a similar condition arose in the calf muscles and, later still, the back became affected. There was some general malaise and the patient felt tired all over so that he left his work. After a three weeks rest he felt somewhat improved and went back to work. During his stay at home a considerable puffiness of the face with redness was first remarked. The lameness when I saw him, extended to the arms and neck, muscular exercise became painful and the muscles were rather tender to pressure. The patient had been at home six weeks and had gradually failed in strength. There had been profuse hyperidrosis with little fever.

*Examination.*—Physical examination December 17, 1904, a remarkably well developed and muscular man, yet he had considerable difficulty in getting up the steps to my office. Beads of perspiration stood on the face and neck. The face was slightly erythematous and puffed. There was a brawny edema over the neck and arms, also slightly over the thighs. Some tenderness was elicited over the affected parts but this tenderness did not follow nerve trunks. There was no loss of sense of touch, pain, temperature or position. Full extension of arms or legs was difficult and caused pain in the flexor group of muscles. The hand grasp was weak, muscle fatigue coming on rapidly. The pupils were equal and reacted alike to light and distance. The triceps, quadriceps, achilles and plantar reflexes were present. The Babinski reflex was absent. The muscles did not respond abnormally to mechanical stimuli. Irritability to both galvanic and faradic currents was normal except at edematous areas, where it was slightly diminished. The abdomen was full and muscular, making examination difficult, but the spleen seemed to be just palpable. The heart apex was in the fifth interspace on nipple line; there were no murmurs. The pulse was 90 and of fair volume. The temperature was 99 F. The urine was negative. Blood examination: Red cells 4,800,000; hemoglobin 80 per cent.; leucocytes, 9,000; polymorphonuclear leucocytes, 70 per cent.; lymphocytes, 25 per cent.; basophiles, 4 per cent.; eosinophiles, 1 per cent.

*Subsequent History.*—Aided by my experience with two other cases the diagnosis of polymyositis was readily made and the patient's removal to the Worcester City Hospital advised. The treatment adopted at the hospital was, briefly, rest in bed with a short period of exercise, a diet composed largely of nitrogenous food with a large amount of liquids, diaphoresis, thermotherapy and quinin sulphate, 5 grains after each meal. During the next month there seemed to be a slight improvement, though on some days the edema about the face and neck would be well marked. The biceps and quadriceps muscles felt brawny and inelastic. The patient's appetite remained good and he got normal sleep. Control of the bladder and bowels was normal. Toward the later part of January, 1905, the swelling of the right arm increased considerably and the hand and arm were extremely painful on motion. Hyperesthesia along nerve trunks and functional weakness indicated that the brachial nerves had become involved. The patient had had one or two attacks of epistaxis earlier but on January 22, the flow was so free that the nares had to be sprayed with adrenalin and packed. There had developed a slight systolic heart murmur near the apex but not transmitted outward.

February 9.—Treatment by drugs, diaphoresis, etc., did not seem to stay the progress of the disease. The patient had marked swelling about the throat and began to find it difficult to swallow food. Examination of the throat by Dr. Estabrook showed marked infiltration and weakness of the muscles of the pharynx and larynx. Preparation was made for tracheotomy, if necessary.

February 12.—After progressive difficulty in respiration and swallowing of saliva, the patient suddenly had a choking fit in the night and died before the physician reached his bed. He was practically clear mentally until the end.

Autopsy was not allowed, except the removal of a portion of the right biceps muscle. In removal the subcutaneous tissues were found infiltrated with serum and the muscle was pale, yellowish and friable in places. The excised muscle, when put into alcohol, appeared mottled gray and red on the cut surface. Some of the results of the pathologic examination of specimens from this muscle are shown in the accompanying photo-

graphs (Figs. 1 to 8). The specimens were hardened either in Zenker's fluid or alcohol, imbedded in paraffin or celloidin and stained with hematoxylin and eosin, methylene blue and eosin or by the method of Van Gieson. Sections stained by the method of Gram-Weigert and carefully studied failed to give positive evidence of bacteria in the tissues.

Following the classification of Lorenz, the above cases would fall under the head of "dermatomyositis," yet

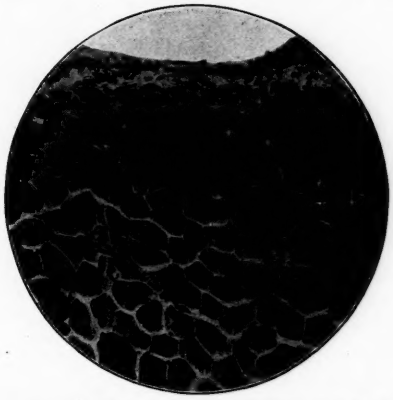

Fig. 1.—Polymyositis, Case 2; Cross-section of right biceps muscle (magnified 150), showing early stage of interstitial polymyositis with invasion of muscle bundles, with many mononuclear cells from the direction of the fascia. Lower part of section shows normal muscle.

they are so characteristic in their insidious onset and slow course and general involvement of the muscular system that I have chosen the title "subacute polymyo-

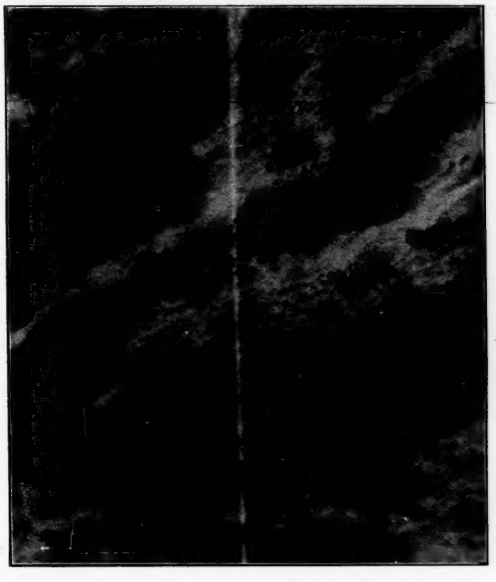

Fig. 2.—Polymyositis, Case 3: Longitudinal section (magnified 1,200) showing clumps of deep-staining bodies (cut by white line) resembling bacteria, but probably the result of granular degeneration of the sarcoplasm.

sitis." Cases 1 and 3 follow out the classical symptoms of the most severe form of dermatomyositis, except that there was little erythema, and both died with the usual respiratory involvement. Circumstances beyond my control prevented an autopsy in Case 1, which is to be the more regretted because in this case the disease ran its full course from the insidious beginning through the fulminating stage with most marked inflammatory edema to the stage of extreme wasting and atrophy. If the theory is correct, which seems to be borne out by pathologic reports, that the disintegration of muscle taking place as a result of invasion by toxemia or other

Fig. 3.—Polymyositis, Case 3: Cross-section of right biceps muscle (magnified 40) showing separation of bundles by edema and excess of connective tissue. Pallor and shrinking of fibers at borders of bundles especially.

products is followed, with the subsidence of inflammation, by a low grade of connective tissue formation, then in Case 1 I feel confident that practically no normal muscle structure would have been found but scarcely more than strips of connective tissue. At any rate, my last examination by palpation of this case would warrant that conclusion.

We find the patient in Case 3, however, dying of asphyxiation with the muscles about in the middle stage of the slow process. Some bundles show the earlier stage with great infiltration with leucocytes and strange

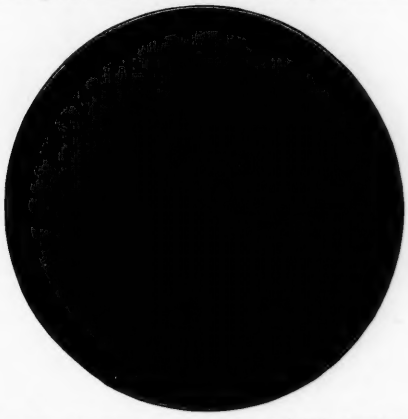

Fig. 4.—Same as Figure 3, only magnified 400, showing varying size of muscle fibers, with marked granular degeneration and vacuolation. Excess of nuclei with occasional mitotic form.

nuclei, some are marked by the excess of serum and areas of hemorrhage, some by granular and hyaline degeneration with vacuolation, but few show any advanced degree of organization of connective tissue. Case 2 shows chiefly the beginning invasion of the bundles by leucocytes and round cells.

The etiology of these cases is unknown. Cultures taken from Cases 2 and 3 gave no growth on various media and no definite bacteria or protozoa could be stained in the tissues. It is a remarkable coincidence that all these cases appeared in the same city in the same year, but each case was three miles from any other and in no way associated.

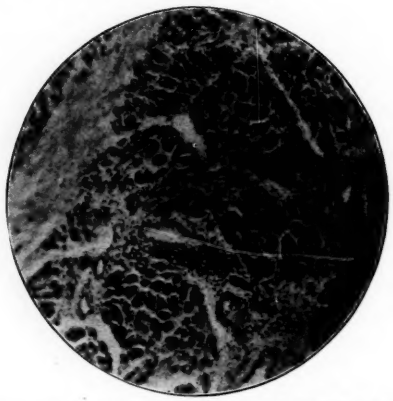

Fig. 5.—Case 3: Cross-section (magnified 60) showing marked infiltration of the perimysium and endomysium with round cells. Disintegration of muscle fibers going on, comparatively few fibers staining deeply.

Possibly, in view of the fact that none of these cases was diagnosed for several weeks until I saw them, and that Case 3 was referred to me only after my report of the others at a medical meeting, the malady may be more common than is supposed. The very small number of typical cases reported, however, bespeaks their rarity. Lorenz could collect from all sources only fifteen cases which he classified as dermatomyositis. In

Fig. 6.—Same as Figure 5, only longitudinal section; same magnification, showing narrowing and crinkling of fibers, areas of vacuolation and waxy degeneration; also excess of connective tissue with round-cell infiltration.

1904 Steiner[18] had collected twenty-eight fairly typical cases, giving a résumé of the pathologic examinations when made. Since that time several authors have reported cases of some form of polymyositis, but I have been unable to satisfy myself that more than one of these belongs to the type of severe dermatomyositis such as two of my cases present.

18. Dermatomyositis, with Report of a Case, etc., Jour. of Exp. Med., vi, 407.

This case, the first to be reported from Russia, is by Preobrazhenski and Margulis.[19] The young woman affected had had the disease coming on insidiously for six months when examined. There was some edema and general involvement of the muscles, especially of the arms and legs. Epistaxis was a prominent symptom. A section of muscle was excised from the leg which

Fig. 7.—Case 3: Longitudinal section (magnified 200) showing longitudinal cleavage at point marked by arrow. Proliferation of nuclei resembling giant cells. Loss of striation in all muscle fibers.

showed the changes of polymyositis. In spite of treatment the disease progressed and the woman died of laryngeal palsy three months later. There was a complete autopsy report of various muscles and the changes were similar to those described in Case 3.

Cases reported by J. Baer,[20] Bevill,[21] Méry, Terrien and Génevrier,[22] Murrell[23] and Sick[24] are in some way atypical. Sick reports three fairly severe and six mild cases with symptoms of polymyositis occurring in the

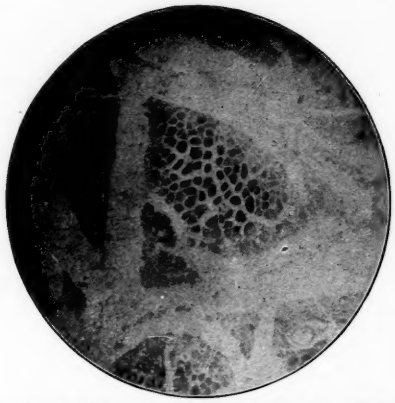

Fig. 8.—Same as Figure 7, only cross-section magnified 40, showing wide separation of muscle bundles by edema. Apparent disintegration of peripheral fibers earliest by pressure or toxins. Fibers in center more nearly normal.

19. Kuchenigu o poliomiozitie., J., nevropat. i psikhiat., Kossakova, Mosk., 1904, iv, 841; also translation in Rev. de Méd., Paris, 1904, xxiv, 765 and 851.

20. Ueber akute Polymyositis. Münch. med. Wochschr., 1904, li, 151.

21. A Case of Polymyositis with a Rare Complication, Blindness, St. Louis Med. Rev., 1904, l, 290.

22. Polymyosite infectiouse aiguë bénigne chez un enfant de neuf ans, Bull. et mém. Soc. méd. d. hôp. de Paris, 1904, 3 S., xxi, 1115.

23. Dermatomyositis or Acute Polymyositis, Med. Press and Circ., London, 1905, n. s., lxxix, 207.

24. Akute rezidevierende Polymyositis in epidemischen Auftreten, Münch. med. Wochschr., 1905, lii, 1092 and 1152.

epidemic form, but the cases are too acute and short-lived to belong to this group.

Some Japanese authors have written of forms of polymyositis occurring in Japan, but from the literature obtainable I do not find the cases of the subacute type. Ito and Konaka's[25] ten cases of myositis apparently arose from direct infection through the skin or tonsils and caused local suppuration, necessitating operative procedure. Hnátek,[26] among others, has described a case more typical of polymyositis hemorrhagica.

In conclusion I wish to express my indebtedness to the several physicians for referring to me these cases, and especially to Dr. Ernest L. Hunt, assistant pathologist of the Worcester City Hospital, to whom all credit is due for the pathologic and photographic work in Case 3.

## A MIXED TUMOR OF THE PAROTID GLAND.

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*History.*—X. Y., aged 45, consulted me Sept. 1, 1906, with reference to a growth in the region of the parotid gland. His family history was negative. Eight years previously he first noticed a slight enlargement over the parotid gland on right side, this grew slowly for two years until it attained the size of an egg. About this time a physician removed it. A year later the growth made its reappearance and enlarged slowly up to two months ago, then it enlarged rapidly.

Figs. 1 and 2.—Front and side views of patient with mixed tumor of the parotid.

*Examination.*—It was, when seen, about the size of a large cocoanut (Figs. 1 and 2). No tenderness on pressure nor pain at other times had been noticed. The principal disturbances had been from the size of the growth and the consciousness of its presence. There had been no marked increase in the parotid secretions. The seventh nerve had not been envolved as there was no paralysis; the hearing was good. The growth was freely movable over the ramus of the jaw and had a nodular appearance with numerous erythematous patches over it. Numerous large veins ran in tortuous courses over the growth. Many nodules were firm while others were semi-fluctuating. At several points the growth presented superficial ulcerated spots the size of a finger nail. In general appearance it resembled an inflamed lipoma or a multinodular uterine fibroid.

*Operation.*—In operating in this case I made the incision from in front of the ear downward and forward along the angle and lower border of the inferior maxilla. The integument at the base of the tumor along this line was seemingly in a healthy condition and was saved to be used to cover the wound after the growth was removed. An incision on the facial side of the growth was made meeting the line of the first. The filaments of the seventh nerve were easily recognized and pulled aside, the capsule of the gland and tumor was left intact during its removal, the dissection was made mostly from the lower side of the growth, the vessels were ligated as soon as cut and very little blood was lost during operation. The facial side of the dissection was made early as the seventh nerve could thus best be discovered and protected. A careful search failed to find any accessory gland structure. The incision was closed with a small drainage inserted at the angle of the jaw. The line of the closure was made to correspond with the natural curve beneath the jaw, thus avoiding an unsightly scar. Recovery followed and now, one year later, there has been no return.

No one characteristic feature of a growth of this kind is of much value in making a macroscopic diagnosis; however, in this case there existed so many traits of a mixed tumor that I felt warranted in diagnosing it as such. Its location (the parotid), its slow primary development, with later more rapid growth, freedom from tenderness or pain, the fact that it was freely movable and that there was no glandular involvement nor constitutional effects, the rarity of other forms of neoplasms in this locality and the contour, consistency and surface markings of the tumor all pointed to its being a growth of that class designated by Bergmann and others as a "mixed tumor."

Growths appearing in the parotid gland as a rule assume the atypical forms, some consisting only of hyaline cartilage and connective tissue. The cartilage frequently undergoes mucoid changes, giving rise to soft spaces in the tumor. These growths of the parotid gland are not very prone to dissemination. In the mixed tumors considerable connective tissue is developed. If slow there may be much connective tissue; if there is rapid cell proliferation the stroma may be choked out. Sarcoma and endotheliomata may both exist in the same tumor. Endotheliomatous elements are usually found in all rapid growing sarcomata. If on serous membrane they are usually multiple. The nature of these growths is not fully settled, as they seem to have both a connective tissue and epithelial elements.

On cutting into this growth after its removal it presented to the eye the character of many growths, one spot looking like a sarcoma, another resembled an enchondroma, again there seemed to be a carcinomatous focus, while scattered through the growth were mucoid

25. Juntendo Iji Kenkin Kwai Zasshi., Tokyo, 1903, 883; also translation in Deutsche Ztschr. f. Chir., Leipzig, 1903, lxix, 302.
26. Case of Polymyositis with Hemorrhages, translation in Wien. med. Presse, 1905, xlvi, 917.

or colloid masses. It was connected to the gland by a broad base on its facial aspect.

Valkmann, Nasse and others maintain that the endothelial cells present resemble the epithelial cells very much, but are true endothelial cells, taking their origin from proliferated cartilage cells.

While other pathologists maintain that both epithelial and connective tissue cells may enter into the formation of these mixed tumors of the parotid, von Bergmann pins his faith to the germinal displacement theory and mentions the presence of osseous and cartilage tissue in the parotid as being decidedly foreign.

These tumors may develop at any age from infancy to old age. The theories as to their etiology are purely speculative in the face of the disputed classification of these growths. Neither sex, age, occupation, heredity nor traumatism have been traced as a cause in a sufficient number of cases to be of much value from an etiologic standpoint. These growths may grow to be very large, as the accompanying illustrations show.

These growths are not painful on pressure. There is a peculiar cartilaginous hardness of the nodules between which are soft semi-fluctuating areas; these tumors are freely movable. In the typical mixed tumors of the parotid the diagnosis is usually easy; however, a lipoma

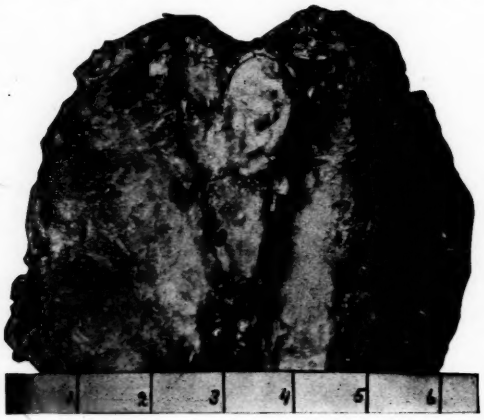


Fig. 3.—Parotid gland tumor of the mixed type, after removal, showing size in inches.

or a lymphoma may lead to an error in diagnosis. The prognosis for a patient with a mixed tumor is, if seen early, a favorable one. Many growths of its benign character, however, may by time or injury be changed into one of the most virulent types of sarcomata. The presence of an accessory parotid with a minute growth in its substance or the incomplete extirpation of the original growth may explain why these tumors often reappear and maintain their benign character.

Early extirpation of these growths should be carried out; by this course the greatest percentage of cures will be attained. All precautions should be used in safeguarding the seventh nerve and as thorough, clean extirpation as possible should be practiced.

These growths, like all neoplasms, should be removed thoroughly and early, as only by this method of dealing with them can we expect to save surrounding structures and their functions and prevent widespread dissemination and recurrence. The removal of these parotid gland tumors is often quite difficult owing to their close proximity to the seventh nerve and their deep vascular supply.

## A CASE OF SYSTEMIC BLASTOMYCOSIS.*

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AND
A. M. STOBER, M.D.
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CHICAGO.

The subject of blastomycosis is rapidly gaining the attention of the medical profession, and recognized cases of cutaneous infection are now comparatively common. Greater attention is now being given to the more rare systemic forms of the disease and the varied clinical and pathologic manifestations.

The following case adds not only to our general knowledge, but presents a few additional features of unusual interest:

*Patient.*—M. L., aged 42, married, native of Poland, laborer by occupation, had lived in United States four years. He was admitted to the Cook County Hospital April 8, 1907, and assigned to the service of Dr. Loeb as a case of acute articular rheumatism. No history having been obtained at that time, this diagnosis was made by the examining physicians because of the obvious swelling of the hand and foot.

*History.*—After admittance to the ward, the following history was obtained with the aid of an interpreter: About four months before admission patient was taken with a severe cold, associated with cough and expectoration. This interfered but little with his general health. He next noticed a pain in the back, which, at first, was felt only on motion, later when lying on the back. A month later a swelling appeared at this painful area in the dorsal region, at the left of the median line. The cough, which persisted from the onset, became more marked, with abundant expectoration. His appetite began to fail and he noticed that he was losing in weight. About four weeks before admission blood was present in the sputum for several days. It had been present but once since that time. General weakness became so pronounced that he was compelled to stop work six weeks after the onset. Two months before admission painful swellings developed successively on the back of the left hand and foot, and in the chest wall on the left side over the eleventh rib. The next lesion appeared three weeks before admission as a small papule on the right ala of the nose. This was quite painful, and developed slowly into a warty growth. A week later enlargement of the submaxillary glands on both sides of the neck was noticed. He complained of cough, profuse expectoration, night sweats, marked general weakness, and pain in the affected parts. The patient denied previous illness of either a general or specific nature. The family history was negative, except that his first wife died of tuberculosis. Three children borne by his second wife are healthy. The patient had been a coal heaver the past four years, and his habits were moderate in every respect.

*General Examination.*—The patient was a middle-aged man, considerably emaciated, and very anemic. He lay on the right side and suffered much pain on even slight movements involving the affected parts. The skin was moist, the perspiration being especially profuse on the forehead and in the axillæ. The respirations were free and rapid, averaging thirty per minute. The pulse was full and regular. The temperature was 99.8 F. The scalp was normal, the face drawn, the cheeks sunken, and the eyes were partly closed. The pupils were dilated, equal, and reacted to light and accommodation. There was no nystagmus nor evidence of ocular paralysis. In the middle of the forehead was a small papillomatous growth covered with a thin yellow crust. On removal of this crust a small quantity of pus appeared. The margin was indurated, red and sharply demarcated from the surrounding skin. At the margin of the right ala of the nose was another larger growth, which measured 1.5 cm. in length. The papillomatous character was more distinct, and it extended into the nostril for a distance of 0.5 cm., being associated with considerable swelling of the adjacent tissues. The left ala of the nose was

*A part of the article is omitted from THE JOURNAL for lack of space. The complete article appears in authors' reprints.

red, swollen, and indurated, but the overlying skin was smooth. All these areas were very tender. The nasal cavity, mouth and pharynx were much congested with marked formation of mucus. No growths were visible and the tonsils were not enlarged. The tongue was dry, the dorsum being covered with a brown coat, while the margins were bright red. The teeth were in poor condition, many showing marked decay. In the submaxillary region on both sides of the neck was a hard, round, deep-seated swelling, about the size of a walnut. The anterior and posterior cervical lymph glands presented slight enlargement. No cervical rigidity was present. The thyroid was small and irregular. The bony framework of the chest was prominent, owing to the marked emaciation. Over the sixth rib on the left side in the nipple line was a rounded swelling about two inches in diameter. The overlying skin was red and adherent to the mass, and slight fluctuation was present. Posteriorly, on the right side over the twelfth rib, was another swelling of the same size, (Fig. 1), but the skin was not adherent, and it did not fluctuate. Directly over the

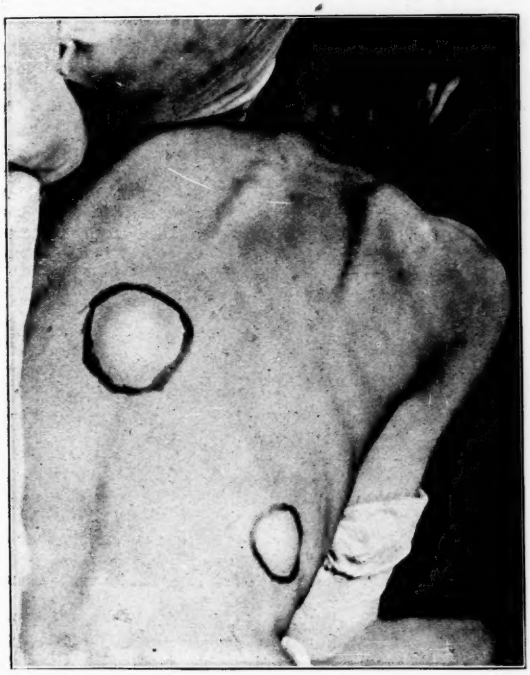

Fig. 1.—Abscesses of the back as they appeared shortly after admission.

spine, extending from the level of the eighth dorsal to the first lumbar vertebræ, and measuring three inches transversely was still another swelling (Fig. 1), which showed fluctuation and was also adherent to the overlying skin. Pressure over these areas excited marked pain.

Expansion of the chest was slightly retarded on the right side. On percussion the lungs showed no changes anteriorly. Posteriorly dulness was obtained over the lower lobe on the left side, and over a small area below the angle of the scapula on the right side. On auscultation of the lungs anteriorly a few bubbling râles could be heard over the base. Posteriorly on the right side over the above mentioned area of dulness, the breath sounds were loud and harsh, and numerous subcrepitant râles could be heard. On the left side over the upper part of the area of dulness the same findings were obtained and whispered and voice sounds were increased in intensity. At the bases these râles were audible, but the breath sounds were suppressed.

The heart, as ascertained by percussion, was slightly enlarged to the left. The apex beat was palpable in the fifth interspace in the nipple line. A slight murmur could be heard over the apex, but it was not transmitted to the left. Other sounds were normal.

The abdomen was scaphoid. On percussion and palpation no abnormalities were noted. The liver and spleen were not palpable. The genitalia were normal. The lymph glands of the inguinal region were enlarged, forming a continuous chain on each side. On the dorsal surface of the right forearm were two small papillomatous growths, which resembled closely the one on the forehead. Considerable pain was elicited by deep pressure on the muscles of the forearm, but no swellings could be detected.

The left hand and foot presented a diffuse swollen condition, which was most marked on the dorsal surfaces. The middle finger also showed a diffuse enlargement, being nearly twice as large as normal. These swellings were characterized by pain, fluctuation, tenderness, and slight redness of the overlying skin. Examination of the nervous system revealed nothing abnormal.

The case aroused considerable interest and was diagnosed syphilis, pyemia, and tuberculosis by different observers, the growth on the nose being generally regarded as epithelioma.

Fig. 2.—Blood culture tube after seven days, showing the two original colonies.

Fig. 3.—Blood culture tube after twelve days, showing numerous secondary colonies.

*Treatment.*—Inasmuch as the diagnosis of syphilis was regarded as the most probable, the patient was given potassium iodid, 20 grains, and the protoiodid of mercury, 1/5 grain, four times daily, with the effect of marked softening of the swellings. The potassium iodid was continued for a number of weeks, after which quinin and acetylsalicylic acid were administered.

April 19 the character of the nasal growth was recognized and a diagnosis of generalized blastomycosis was made. Blastomyces were then demonstrated in smears of pus from the nasal growth. The organisms were also found in the sputum, urine sediment, and the aspirated contents of the swellings of the left hand and foot. The nasal growth was then excised and sections made after infiltrating with celloidin. Microscopic examination showed changes which are typical of those described as occurring in blastomycosis of the skin. The epidermal layer presented a hyperplastic thickening with marked irregularity of the papillæ. Scattered throughout were numerous intraepithelial abscesses densely packed with lymphocytes, desquamated epithelial cells and polymorphonuclear

cells, the latter predominating. Blastomyces were present as round or oval refractile bodies occurring singly, or in clumps of three or four. Budding forms were present. No giant cells were present in the purely intra-epithelial abscesses, but they were quite numerous in the cutis and in those areas formed by cross section of the papillæ. Here the cellular infiltration was dense, and, except in a few local areas, the mononuclear cells predominated. Many plasma cells and eosinophiles were present. In several places the blastomyces were found in the giant cells. Attempts to isolate the blastomyces in pure culture resulted in failure, because of the numerous other organisms present.

Blood cultures made at this time gave some very interesting results. After thorough cleansing of the arm, 5 c.c. of blood were aspirated from the median vein and distributed equally into ten large test tubes, each containing 10 c.c. of ordinary bouillon. After incubation for three days, two discrete white colonies were observed in one of the tubes, suspended in the fibrin meshes which permeated the fluid. These grew rapidly and began to show a distinct radiating structure. From one

Fig. 4.—Abscess in the sternum. A rectangular portion has been removed, exposing the zone of invasion.

of these a smaller colony gradually separated by its own weight (Fig. 2), and was later removed for examination and subculture, to which reference will be made later. The removal of this colony, which showed a distinct blastomycetic structure, resulted in the dissemination of organisms in the bouillon, for in a few days about thirty secondary colonies (Fig. 3) were observed scattered throughout the media. By this time the original colonies had attained a diameter of 5 mm., the margins showing a fluffy radiating structure, while the center was becoming clear and indistinct. This is the second case in which the organisms have been recovered from the blood, the first instance having been recorded by Buscke. Pure cultures were obtained in every instance from the pus obtained from the abscesses.

*Blood Examinations.*—April 24 the red blood cells numbered 2,420,000 per c.mm. The white cells numbered 14,200 per c.mm. A differential count of 200 cells showed polymorphonuclear neutrophiles, 67 per cent.; large mononuclear leucocytes, 9 per cent.; small mononuclear leucocytes, 16 per cent.; eosinophiles, 2 per cent.; myelocytes, 3 per cent., and transitional forms, 2 per cent. May 8 the waite cells numbered 22,800 per c.mm. Still another examination on May 16 gave a red cell count of 2,280,000 per c.mm. The hemoglobin was estimated at 70 per cent. (Tallquist). The leucocytes numbered 29,800. A differential count of 200 cells showed 77 per cent. polymorphonuclear neutrophiles, 7 per cent. large mononuclears, 6 per cent. small mononuclears, 1 per cent. eosinophiles, and 8 per cent. myelocytes.

*Urine Examinations.*—April 4, a. m., specimen; color, amber; specific gravity, 1015. No sugar or albumin present. Diazo reaction negative. The sediment contained a few leucocytes. No red blood cells nor casts were present. An examination on April 25 gave about the same results, except that the sediment contained a few hyalin casts and leucocytes, and a large number of round and oval refractile bodies, possessing a double contour and staining poorly with methyl blue. On May 6 another examination gave the same findings, except that the specific gravity was high, being 1.028. A careful study of the refractile bodies (blastomyées) found in the sediment left no doubt as to their character, as they did not dissolve in a 40 per cent. solution of potassium hydroxid and presented numerous budding forms. They undoubtedly had their origin in the pus from the abscesses in the prostate which were found at the autopsy.

*Sputum Examination.*—The sputum, which was abundant, was of a yellowish purulent character, with varying amounts of blood, which at times were sufficient to give the sputum a brick-red or chocolate color. It was thick in consistency, but not tenacious. Repeated examinations failed to demonstrate tubercle bacilli. Many blastomyces were found in the potassium hydroxid preparations.

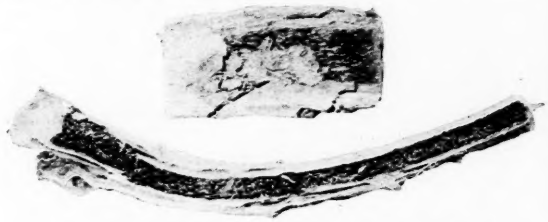

Fig. 5.—Abscess and diffuse osteomyelitis of the seventh rib.

Nothing of importance was found in several examinations of the feces.

*Subsequent History.*—During the subsequent course the patient became gradually worse and was helpless and bedridden after May 18. He complained bitterly of pain in the affected parts, especially on motion, or when the abscess walls became tense from pressure of the enclosed pus. Evacuation of these gave marked relief.

The appetite continued fair, and he was able to eat ward diet for some time, but, in spite of this, he continued to lose flesh, and the emaciation became pronounced. No nausea or vomiting occurred at any time. The bowels were fairly regular. Urination was normal. His sleep was often disturbed by the pain occasioned by involuntary movements about the bed. Perspiration was profuse and constant. The mental condition of the patient was very good, but he showed marked irritability and became morose toward the end. The cough was not especially marked at any time, but the expectoration was profuse. The local lesions progressed more or less rapidly. The nasal growth was excised April 19 for bacteriologic and histologic examination. The induration extended into the nostril for some distance, and it is probable that all of the infected tissue was not removed, as the wound again took on a papillomatous appearance. The opposite ala also became red and swollen, and the surface covered with a thin brown crust. The abscesses on the hand and foot became more soft and fluctuating, and were aspirated April 19. Marked relief from pain resulted for a few days, but it became necessary to incise and drain a few days later. The pus obtained was thick, varied in color from a light yellow to a dark brown.

The abscesses on the back were also aspirated and the one on the left side of the chest was incised May 15.

During this time new abscesses formed in the right forearm and hand and in the inner part of the left thigh. These were subsequently opened and pus of a similar nature evacuated. With one exception, the discharge from these abscesses had been continuous and profuse and a distinct mouldy growth occurred on some of the dressings in which the discharge had become dried.

The other physical findings changed but little, except for increased dulness with harsh breath sounds and coarse râles over both lungs.

During this illness the temperature curve showed a morning elevation of temperature, with marked evening remissions, the latter often subnormal, at one time reaching as low as 96 F. The high points ranged between 100 and 102 F. until the last two weeks, when temperatures between 102 and 103.8 F. were recorded.

The pulse continued fairly steady between 100 and 120 beats per minute until two weeks before his death, when it began to follow the temperature curve, going as high as 140. During the last four days of his illness it varied between 120 and 160, continuing high, while the temperature became subnormal.

The respirations averaged about 26 per minute and did not show any marked variations until the last week, when they also became more rapid following the general pulse and temperature curve. During the last four days they became more rapid and labored, running from 54 to 60 per minute until the end. Death occurred June 14 and was undoubtedly due to exhaustion.

*Autopsy.*—Permission for autopsy was secured three days after death and the following anatomic diagnosis was made: Miliary and nodular blastomycosis of the lungs, kidneys, spleen, cerebrum, pleura and lymph glands. Multiple blastomycotic abscesses of the cerebrum, cerebellum, prostate, pleura, skin, osseous, muscular and subcutaneous tissues. Parenchymatous nephritis. Fatty changes, adenoma and angioma of the liver. Adenoma of the thyroid. General lymphatic hyperplasia. Shaven beard appearance of Peyer's patches. Atrophy of the testicles. Fibrous pleuritis.

*Pathologic Report* (Abstract).—The body was extremely emaciated and some edema of the feet and ankles was present. The surface was marked by a number of skin lesions, fistulæ and swellings representing abscess formations. The skin lesions were more or less characteristic and were distributed over the right upper lip, right eyebrow, knee, elbow and costal margin, the left cheek and both alæ of the nose. The fistulæ were either open and discharging a thin yellow pus or covered with a brown crust. They were located on the inner side of the left foot, dorsal surface of the right hand and radial sides of both forearms. All these were the results of operation, none of the abscesses having ruptured spontaneously. Abscesses confined more or less to the subcutaneous tissue were located as follows: On the left side over the eleventh and twelfth ribs and measuring 5 cm. in diameter; to the right of the spine opposite the fourth and fifth vertebræ; below this directly over the spine extending from the sixth dorsal to the third lumbar vertebra and to either side for a distance of 6 cm. Separated an inch from the above and to the left of the median line was anotner large abscess measuring 9 cm. in diameter. The abscesses in the muscular tissues were located in the submaxillary region of the left side beneath the platysma and sternomastoid muscles; in the left thigh and right forearm.

Abscesses involving bony structures were either confined to them or communicated with diffuse or circumscribed collections of pus in adjacent soft parts. They were located in the bones of both hands, the left foot, right ankle, sternum (Fig. 4) and the seventh rib (Fig. 5) of the right side.

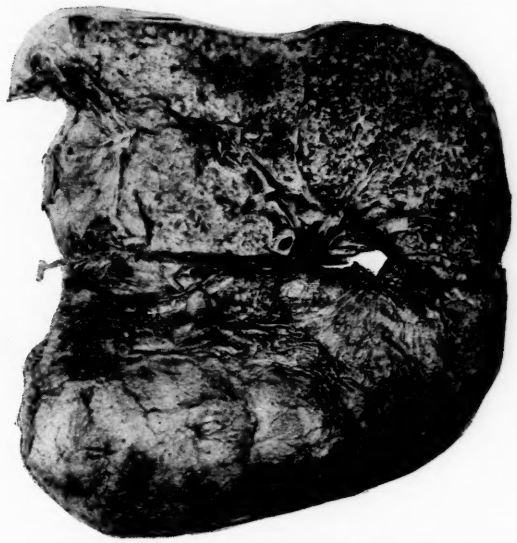

Fig. 6.—The right lung showing pleural and cut surfaces. In the latter can be seen miliary and confluent blastomycotic nodules.

Fig. 7.—The prostate, showing blastomycotic abscesses.

The deep cervical and peribronchial lymph glands were much enlarged and contained some small yellow nodules. The submaxillary, superficial cervical and axillary glands were also somewhat enlarged. Both pleural cavities were obliterated by fibrous adhesions and the lungs were removed with difficulty. The right pleural layers were united into a white fibrous coat and contained a small abscess communicating with an abscess in the seventh rib.

The lungs were large and firm and crepitated feebly throughout. Beneath the pleura and on the cut surface could be seen a large number of small white or gray nodules from 1 to 4 mm. (1/25 to 3/16 in.) in diameter (Fig. 6). In the right lower lobe the nodules had become confluent, forming irregular grayish white areas 1 cm. or more in diameter. The general appearance was not unlike that of tuberculosis. The kidneys presented a parenchymatous nephritis and contained a number of nodules beneath the capsule and on the cut surface. A number of nodules were also present in the spleen. The prostate (Fig. 7) was enlarged and contained a large fluctuating abscess in the left lobe. The right lobe was fibrous and contained a few purulent areas. The brain contained five small abscesses in the cerebrum and two in the cerebellum.

*Histologic Examination.*—The various lesions presented more or less round-cell infiltration. In the larger foci polymorphonuclear cells and evidences of necrosis (Fig. 8) were present. Giant cells were found in most of the tissues, sometimes very abundantly. Their abscence was noted especially in the spleen, bone and joint lesions. Blastomyces were demonstrated in every instance. The viscera not mentioned contained no discoverable blastomycotic changes.

*Bacteriologic Examination.*—In addition to the cultures obtained during life, material was taken at autopsy from the knee joint and the abscesses of the spleen, pleura and prostate. Pure cultures were obtained from the first three mentioned and a mixed culture from the prostate. The organisms were demonstrated in smears of material taken from the nodules of the kidney and the abscesses in the brain and rib. All the cultures obtained from pus and necrotic material appeared to be similar, but that obtained from the blood shows a few differences. A detailed comparative study of these and other organisms will be presented at a later date.

Since the diagnosis of this case was established three other cases were found in the wards of the hospital, and the reports of these, including one autopsy, are in preparation.

Fig. 8.—Section of sternum showing infection of bone marrow. 1, Bone; 2, central necrotic zone of infected marrow; 3, peripheral border unaffected tissue; 4, light areas representing clumps of blastomyces.

## SUMMARY.

Briefly summarized, this case represents a generalized blastomycotic infection. The onset was characteristic of a severe bronchitis and the principal symptoms were cough, expectoration of a purulent and bloody sputum, evening rise of temperature, night sweats, progressive emaciation and pain in the affected parts. The course was of seven months' duration and marked by successive development of numerous skin lesions and superficial abscesses.

The similarity of the clinical course and the pathologic changes to those of tuberculosis has undoubtedly been the cause for a large number of cases having been considered as instances of that disease. The presence of the characteristic skin lesions should be very suggestive, and the diagnosis is easily established by the demonstration of the organisms in the sputum and pus.

In this case, according to the history, the first skin lesion appeared three months after the onset and two months after the development of the abscess in the back. The respiratory tract was, therefore, the first to give evidence of infection with subsequent localization in other parts. The predilection of the organism for the small bones and the ends of the long bones is marked. There can be no doubt as to the etiology of the disease, but our knowledge of its inception and transmission is still limited. Further reports will undoubtedly throw some light on this phase of the subject.

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## HEART BLOCK AT NINETY-ONE.

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ROSWELL, N. M.

*History.*—J. A. P., justice of the peace, aged 91, visited me in March, 1907, for shortness of breath and vertigo.

*Examination.*—Examination of the heart revealed the following: The systolic contractions were irregular; a pause

Fig. 1.—Heart in a case of heart block. A, left auricle; V, left ventricle; X, atheromatous deposit; 2, aortic valves; 3, dotted outline of bundle of His crossing tumor.

Fig. 2.—Heart in a case of heart block showing right auricle and ventricle laid open. A, right auricle; V, right ventricle; 1, outline of tumor with bundle of His (dotted area) crossing it; 2, coronary sinus opening; 3, closed foramen ovale.

amounting to the length of three or four contractions would occur following about six normal contractions. During this pause faint contractions could be heard, the pulsations from which did not reach the wrist. No murmurs were heard, but the heart sounds were not pure; they were what would lead one to suspect fatty degeneration of that organ. Pulse, 40; irregular, indicating the pause very plainly. Audible impulses at heart area numbered 66; visible pulsations in the neck, 90. Blood pressure, by the Riva Rocci, 9 cm. cuff; sphygmomanometer was 129 mm. and was peculiar in that some of the pulse beats ceased long before others; the last to stop occurring about every ten seconds before it was finally cut off by the cuff.

*Subsequent History.*—The patient's condition continued more or less constant, at times showing improvement. He gradually became weaker and finally took to his bed. The attacks of syncope became worse and, as described by the attending nurse three weeks before he died, were as follows: Patient would become delirious, pulseless and soon unconscious; this lasting several minutes. He died in one of these attacks on August 15, just six months after I first discovered the symptoms leading me to suspect the condition of heart block.

*Autopsy Findings.*—An examination of the heart postmortem showed extreme fatty degeneration with numerous chalky deposits in both heart and vessels. A large deposit producing a tumor 1½ inches long by ¼ inch in diameter and of stony hardness, was found situated in the substance of the auriculoventricular septum in a position anatomically that would lead one to suspect that it interfered with the functionating of the bundle of His. The photographs (Figs. 1 and 2) of the opened heart give an outline of the lesion and its approximate relation to the bundle of His as described and located by Keith and Tawara. The dotted outline represents roughly the region of the bundle; the irregular oblong outline shows the boundaries of the tumor. The microscopic examination will no doubt be interesting.

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## A CLINICAL STUDY OF THE BROMIN COMPOUNDS WITH SPECIAL REFERENCE TO STRONTIUM BROMID.*

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NEW YORK CITY.

Bromin is comparatively a new remedy. Seventy-five years ago it was unknown in therapeutics. For instance, if you take Paris' Pharmacologia, published in 1825, which, by the way, for the breadth of its views, for the philosophic insight into the fundamental principles of medicine, will compare very favorably with the text-books published in 1907, you will find no mention of the word bromin or bromid. Bromin had not yet been discovered at that date. It was discovered one year later, in 1826, by Balard of Montpellier, who at first named it *muride* (from muria-brine, the source from which he prepared it originally and from which the name muriatic acid is derived); later, at the advice of Gay-Lussac, he changed the name to bromin (from *bromos,* a stench), to indicate its extremely irritating odor.

We will not spend much time on bromin, as it is practically not used as a therapeutic agent at the present time, and there is no reason for its being official. Suffice it to say that during fifteen or twenty years after its discovery it was, on account of its chemical similarity to iodin, considered, therapeutically, the same as the latter. Thus, for instance, Pereira in his "Elements of Materia Medica and Therapeutics" (Edition 1846) says: "It (bromin) seems to possess the same therapeutic influence as iodin, and has been administered in bronchocele, in scrofula, in tumors, in amenorrhea and against hypertrophy of the ventricles. It is usually regarded as possessing more activity than iodin."

This error of considering two substances therapeutically similar or identical, because their chemical properties are similar or identical, is still indulged in by some pharmacologists of the present day, but it is an error against which we should guard most carefully, as it is apt to lead us astray most ignominiously.

For many years after the discovery of bromin, potassium bromid was the only one of its compounds used in medicine. It was introduced into the London Pharmacopeia in 1836, and the reason it was introduced was because Dr. Williams reported great success from its use in a case of enlarged spleen. He thought that it possessed "unusual, if not specific, powers in the cure of diseases of the spleen." As you see, it got into the pharmacopeia under false pretenses, but we have allowed it to stay there because it showed that it possessed decided therapeutic powers in other directions. At first it was simply used as an adjuvant to or a substitute for potassium iodid. It was used in bronchocele (the old name for goiter), scrofula, syphilis, etc. Robley Dunglison says in his "General Therapeutics and Materia Medica" (Lea & Blanchard, 1843): "The effects of bromid of potassium on the economy appear to resemble those of iodid of potassium. It has been used in goiter, scrofulous affections, enlarged spleen, chronic cutaneous diseases, etc., but it is not much prescribed."

It is rather remarkable that it was Ricord himself, the greatest syphilographer of the nineteenth century, who thought favorably of the use of potassium bromid in secondary syphilis. He claimed that it acted similarly to potassium iodid, though more slowly. We know now, as Ricord came to know later on, that the effects of potassium bromid in syphilis are nil; if it does act, it acts injuriously, by deranging the digestion, producing an eruption of its own, thus confusing the physician, etc. And this goes to show that the greatest authority can be mistaken, and that no *ipse dixits* of authorities or text-books must be accepted blindly. For it took quite a few years of useless trials, and of useless injury to patients, before the inefficiency of potassium bromid in syphilis was recognized.

In the fourth decennial revision of the U. S. Pharmacopeia, published in 1864, potassium bromid was the only bromin compound official, and it was in the sixties that the proper status of potassium bromid in therapeutics became pretty well established. Sodium bromid only became official in the sixth edition of our pharmacopeia, published in 1883, and until that year it was, according to some of our friends who tell us to limit ourselves to official preparations only, criminal, or at least highly reprehensible, to employ sodium bromid on our patients. Strontium bromid was made official in the seventh revision of the Pharmacopeia, published in 1894, and the bromid compounds official in the present Pharmacopeia are as follows:

| INORGANIC. | ORGANIC. |
|---|---|
| Acidum Hydrobromicum. | Bromoformum. |
| Calcii Bromidum. | Camphoræ Monobromidum. |
| Ammonii Bromidum. | Hyoscinæ Hydrobromidum. |
| Lithii Bromidum. | Hyoscyaminæ Hydrobromidum. |
| Potassii Bromidum. | Homatropinæ Hydrobromidum. |
| Sodii Bromidum. | Quininæ Hydrobromidum. |
| Zinci Bromidum. | Scopolaminæ Hydrobromidum. |

These are the fourteen official compounds, seven inorganic and seven organic. But it seems that in our

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

hustling, restless, nervous and neurasthenic age this number is not sufficient. Our people apparently need sedatives, for the number of bromin compounds is constantly increasing, and only to-day, while writing this paper, a new bromin compound, defined chemically as the mono-brom-iso-valerianate of urea, has come to my attention.

Having mentioned the official bromin compounds, it will not be out of place to give here a brief enumeration of the non-official bromin derivatives. I shall not attempt to mention every one that has been brought out by the enterprising manufacturing chemists, but only those which have come more or less into use.

*Antisepsin*, also called asepsin, is chemically bromanalid or bromacetanilid. It is a white crystalline powder, practically insoluble in water, but soluble in alcohol and ether, and is used externally as an antiseptic and to a slight extent internally as a sedative and antipyretic. The internal dose is one to two grains.

*Bromacetanilid.* See antisepsin.

*Bromalbacid.* This is an albumin bromin compound. It is a yellowish white powder and is given in doses from 5 to 20 grains. The usual claim is made for it that it is well borne. does not disturb the stomach and does not produce acne.

*Bromalin* is also known as Bromethyformin. It is a white crystalline powder, soluble in water, and is claimed to combine the actions of both a sedative and a urinary antiseptic. It is given in doses of 15 to 60 grains.

*Bromanilid.* See Antisepsin.

*Brom-eigon* is also an albumin bromin compound containing about 10 per cent. of bromin. It is a whitish powder, insoluble in water and practically odorless and tasteless. Dose 15 to 30 grains.

*Bromethylformin.* See Bromalin.

*Brometone* is chemically tribrom-tertiary-butyl alcohol. It is a white crystalline powder having a camphoraceous odor and taste. Very slightly soluble in water, but soluble in alcohol. Its good effects in epilepsy and as a general sedative seem to be pretty well established. Dose 5 to 15 grains.

*Bromipin* is a combination of bromin with oil of sesame. It is marketed in two strengths, one containing 10 per cent. of bromin and one containing 33.3 per cent. The latter product, however, is practically not used in this country. The product is a yellow oily liquid of a slight odor and very disagreeable taste. Some people are utterly unable to stand it, as it sometimes causes unconquerable nausea. In epilepsy its value is pretty well established; but as an ordinary sedative and antispasmodic where quick action is desired it is worthless.

*Bromocoll* is a compound of bromin with tannin-gelatin. It contains about 20 per cent. of bromin. It is a yellowish powder, odorless and practically tasteless, insoluble in water or alcohol, but soluble in solutions of alkalies. When an aqueous solution of it is desired, borax is the best addition. This compound is used both internally and externally. Internally instead of the alkaline bromids, and externally to allay pruritus. For the latter purpose it is used in the form of a 20 per cent. ointment.

*Bromofarina* is a flour containing sodium bromid instead of sodium chlorid, and the bread made from it is called Bromopan. It is used in epilepsy instead of ordinary bread.

*Bromoprotolin* is another of the numerous albumin-bromin compounds containing 10 per cent. of the latter element.

*Bromopirin* is antipyrin in which one atom of hydrogen has been replaced by one atom of bromin. Unlike antipyrin, it is insoluble in water, but soluble in alcohol. It is claimed to combine the properties of both a sedative and an antipyretic and is given in doses of 10 to 30 grains.

*Brompepton* is similar to brom-eigon.

*Bromprotylin* is a combination of bromin with a phosphorus albumin compound said to contain 4 per cent. of bromin. Dose 5 to 20 grains.

*Bromural* is the latest bromin derivative and is chemically mono-brom-iso-valerianate of urea. It is in the form of white scales, soluble in hot water, alcohol and alkalies. Its taste is slightly bitter, its property is hypnotic, its dose is from 5 to 10 grains. Of course, it is claimed to be, like all new hypnotics are, harmless, free from the danger of inducing a habit, etc., but as I have said many times before, there is no such a thing, and probably never will be, as a perfectly harmless hypnotic.

*Monobromphenol* is carbolic acid in which one atom of hydrogen has been replaced by one atom of bromin. It was recommended for external use in various skin affections, but it has not gained any ground.

*Neuronal* is chemically bromdiethyl-acetimid. It is a crystalline powder, slightly soluble in water, but very soluble in alcohol. It has been recommended as an hypnotic in doses of 7½ to 30 grains.

*Tribromphenol*, also known as bromol, is chemically carbolic acid in which three atoms of hydrogen have been replaced by three atoms of bromin. It is in the form of whitish crystals, generally turning reddish, insoluble in water, but soluble in alcohol and glycerin. It is hardly ever given internally now, but it is still occasionally used externally.

*Xeroform* is chemically tribromphenolbismuth. It is a yellowish powder, practically odorless and tasteless in water alcohol or glycerin. It is used externally as a surgical antiseptic and internally as an intestinal antiseptic and astringent. The dose for internal use is 10 to 30 grains.

We will now stop for a moment and see what the real therapeutic status of the bromids is. I do not wish to refer to disputed or uncertain points, but only to facts to which I can certify from personal knowledge and experience.

The bromids are positively useful as anaphrodisiacs; that is, they do act as sexual sedatives. They will prevent chordee, they will prevent night emissions, they diminishing the *libido sexualis* in continent people. They are useful in convulsions, in nervous headaches, in general nervous irritability, and in mild insomnia due to excitement or worry, but not to pain or inflammation. They are positively useful in strychnin poisoning, though in one case of strychnin poisoning which I treated—successfully—I used them in conjunction with chloral hydrate. (They are stated to be useful in tetanus if given in very large doses, but I have had no personal experience in this direction.)

In puerperal eclampsia they are, in my opinion, contraindicated. They are useful in diminishing the epileptic seizures in epilepsy—there is no question that they do that, but that does not mean that they are the best remedies to use in epilepsy. They do not cure the disease, and the injurious effects of the potassium, where potassium bromid is the salt employed, overbalances the beneficial effects. Some one has said that Julius Caesar and Napoleon Bonaparte should have thanked their stars that potassium bromid had not yet been discovered in their times. And I agree with him. For I believe that if they had fallen into the hands of a good orthodox physician who had filled them with large doses of potassium bromid they would not have accomplished what they did and their names would not have gone down to posterity.

But I might as well say it now as later on in the paper, that I blame the potassium more than I do the bromin. Potassium is a peculiar element; in organic combinations, such as the acetate, bitartrate and particularly the citrate, it is a mild element. In the haloid combinations it is toxic and irritating, and should be used as little as possible and as seldom as possible. Particularly in diseases in which it needs to be used for a long time, such as epilepsy, it should not be used at all. For there is no question that used for months or years it disor-

ganizes the blood, weakens the cardiac muscle and permanently affects the mental faculties.

In my practice I have often been in need of a positive sedative—either a general nervous sedative or one with special reference to the genito-urinary system. Of course the first drug used was potassium bromid. It acted satisfactorily as far as the special symptom for which it was administered was concerned, but it did not take me long to notice that the by-effects and undesirable symptoms it produced far outweighed its therapeutic value. And I wish to say right here that the worst effects of potassium bromid, such as acne, furunculosis, ulceration, gastrointestinal irritation, mental and physical depression, etc., are not due to the bromin alone, as is generally thought, nor to the potassium alone, as is thought by some, but to the potassium bromid as a whole, as an entity.

That it is not due to the bromin alone you can convince yourself by giving the same amount of sodium bromid for the same length of time, and you will see that the undesirable symptoms are very much milder. And this is the more convincing from the fact that sodium bromid is stronger in bromin content than potassium bromid is, sodium bromid containing 77.6 per cent. of bromin and potassium bromid only 67.1 per cent. That it is not the potassium alone that does the mischief you can readily convince yourself by giving, say 15 gr. doses of potassium bitartrate for a long period. While we are constantly inculcating in our students' minds that in thinking of a compound we must, so to say, forget the component elements and think of the compound as a whole, still the base or acid radical is often too prominent in the physician's mind. It is true that in many compounds the basic radical overshadows the acid one or vice versa, still we must bear in mind that the compound is an entity and that either radical is strongly modified by the other. And when a patient takes potassium bromid and gets a nasty acne, it is wrong to speak of it as a bromid acne, because it is a potassium bromid acne.

As I said before, potassium bromid was too toxic an agent for me, and the next salt used was sodium. This was more satisfactory than the potassium salt in every way, but it did not fully satisfy me, for while it is much less likely to cause acne and general depression, sensitive stomachs stand it almost as badly as they do potassium bromid. Lithium bromid does not act energetically enough, and this is certainly strange when we take into consideration that lithium bromid contains the largest percentage of bromin of any official salt, namely, 92 per cent., which again goes to prove that you can not judge of the action of a compound by its percentage composition. Ammonium bromid and calcium bromid presented no advantages that I could notice, and they were quickly discarded. Rubidium bromid acts nicely but is too expensive for ordinary use.

My choice finally fell on strontium bromid and, after a most careful and painstaking experimentation, I am ready to declare it is the very best bromid combination. Potassium bromid I have discarded entirely, and in my opinion it ought to be entirely discarded from our therapeutic armamentarium. The question is not whether it acts as a sedative or not; it does. But, as I mentioned before, its injurious effects so much overbalance its value that it is more than unwise to use it and retain it in the Pharmacopeia.

The strontium salts were introduced to the medical profession in 1890 by Professor Laborde, who, I assure you, must not be held responsible for labordine. He has had no more to do with labordine than Lister with listerine or Koch with kochin. The reports of the strontium salts were unequivocally favorable and strontium bromid became official in the U. S. P. in 1890 (published in 1894). A number of contributions have appeared on the superiority of the strontium salts over those of the alkalies and other alkaline earths, the latest being J. M. Bennion's report from the Oxford County Asylum on the superiority of strontium bromid in the treatment of epilepsy.[1] But I will not refer to them, because it is my purpose to detail my own experience and report my own personal results. There is too much copying from other authors and text-books, and thus an error reported by one becomes multiplied a thousandfold. And the exhaustive bibliographies attached to many papers are nothing but useless "show-off" appendages. Bibliographies are in place in articles which are distinctly and frankly résumés of other people's work, but not in original reports.

I have used strontium bromid in about 200 cases, used it skeptically, analytically, using the other bromids at the same time in other patients, as controls, and my results justify me in stating that the real value of strontium bromid is not appreciated by the medical profession. Besides its distinctly sedative (bromid) effect it possesses a soothing effect all its own, for which credit must be given to the strontium radical. It is remarkable that as a urinary-vesical-sedative and anaphrodisiac it is more effective, grain for grain, than potassium bromid, and that, notwithstanding the fact that the latter contains about one-third more bromin than the former (potassium bromid contains 67 per cent., while strontium bromid contains only 45 per cent. of Br).

Strontium bromid does not upset the stomach, nor cause cramps, colic or diarrhea as potassium bromid sometimes does. It does not irritate the kidneys; rather the contrary, it reduces renal irritation, in which property it is similar, to a certain extent, to the lactate of strontium. Under its administration you can often notice a diminution of albumin in albuminuria and of sugar in glycosuria. It never produces acne. I said "never," but I do not like the words "never" and "always" in medicine. Under the administration of large doses over a long period of time, two or three per cent. perhaps will develop some acne pustules, but they are mild and transient.

Not only this, but I have had a number of patients state that their digestion has improved under its use. This is quite possible, if we bear in mind that the strontium salts possess decided, though mild, antiseptic properties. One might suggest that the improvement in the digestive functions might have been due to the general improvement caused by the associate treatment. Perhaps. It is strange, however, that I have never had a patient tell me that his digestion improved while taking potassium bromid.

I can speak with positiveness on this subject because I have had some patients who, for moral or other reasons, had to lead a continent life and who were taking the strontium bromid as an anaphrodisiac for several months at a time. Besides the mild and transient acne, there were no other by-effects that they or I could notice.

I advise you all, whenever you have occasion to administer a bromid, to use strontium bromid in preference to any other. But of one thing you must make sure—that your strontium bromid is *pure*, absolutely

1. Lancet, Jan. 5, 1907.

pure, or at least of pharmacopeial purity, for commercial strontium salts are contaminated with barium, and barium is a distinct poison. And if you get a strontium salt which contains a large percentage of barium you will get more gastrointestinal irritation and more toxic, depressing symptoms than from potassium bromid. In fact, the reason strontium salts came so late into medical use was on account of their general contamination with barium salts, which made their employment dangerous and gave rise to the idea that the strontium salts were toxic. The strontium salts are not toxic—no more than the calcium or magnesium salts are.

Whenever I had a patient complain of irritation in the stomach, or of nausea, investigation disclosed the fact that he was getting a cheap commercial bromid in which chemical analysis easily disclosed the presence of a considerable amount of barium salt. The test for the detection of barium in strontium salts is easy, and whenever the physician has reasons to doubt the purity of salt he should apply it himself. It is performed as follows: Fifteen grains each of strontium bromid and of sodium acetate are dissolved in 75 min. of distilled water, about 5 to 8 drops of diluted acetic acid are added, and then 5 drops of potassium bichromate test-solution. A cloudiness or precipitate indicates the presence of barium, and such salt should be rejected.

What is the dose of strontium bromid? I have long ceased to go by text-book doses. Each patient is a law unto himself, and so is each condition. But as a general rule I start with 10 to 15 gr. doses, increasing to 30 grains three times a day. In some cases in my practice I find it more advantageous to administer one large dose—60 to 90 grains—at night. I usually give it dissolved in distilled water, without any other addition. But when it is necessary to administer it for a long time it is best, both for physical and psychic reasons, to add a corrigent and change it every two or three weeks. The following are good formulas:

| R. | gm. or c.c. | | |
|---|---|---|---|
| Strontii bromidi | 30 | | ʒi |
| Essentiæ pepsini | 30 | or | ʒi |
| Aquæ menthæ piperitæ ad | 180 | | ʒvi |
| (Vel amygdalæ amaræ.) | | | |

M. et sig.: One teaspoonful as directed.

| R. | gm. or c.c. | | |
|---|---|---|---|
| Strontii bromidi | 30 | | ʒi |
| Tincturæ cardamomi compositæ | 15 | or | fʒss |
| Aquæ ad | 180 | | fʒvi |

M. et sig.: One teaspoonful as directed.

## INCOMPATIBILITIES.

While strontium salts have several incompatibilities the principal ones are the citrates and sulphates, as illustrated by the following two prescriptions which came to my notice recently:

| R. | gm. or c.c. | | |
|---|---|---|---|
| Strontii bromidi | 15 | | ʒss |
| Lithii citratis | 20 | | ʒv |
| Tincturæ hyoscyami | 5 | or | m. lxxx |
| Syrupi simplicis | 20 | | fʒv |
| Aquæ | 100 | | fʒiiiss |

M. et sig.: Two teaspoonfuls three times a day.

This makes a nasty mixture, because a double decomposition takes place, with the formation of a heavy precipitate of strontium citrate as shown by the following equation:

$$3SrBr_2+2Li_3C_6H_5O_7=Sr_3(C_6H_5O_7)_2+6LiBr$$

And I might add, by the way, that this prescribing of lithium citrate and strontium bromid in the same mixture is for some reason very common, but the two salts are strictly incompatible and should never be prescribed together.

The second incompatibility is illustrated by the following prescription:

| R. | gm. or c.c. | | |
|---|---|---|---|
| Aquæ ad | 60 | 016 | gr. ¼ |
| Strontii bromidi | 8 | | ʒii |
| Atropinæ sulphatis | | | fʒiii |
| Acidi sulphurici aromatici | 8 | | fʒii |

M. et sig.: Teaspoonful at night.

This has been given to a consumptive patient for night sweats and insomnia. This is absolutely incompatible, as it decomposes the strontium bromid, forming a precipitate of strontium sulphate.

Strontium bromid is also incompatible with the alkaloids, but this is due to the bromid radical and not to the strontium. As you know, all bromids are more or less incompatible with alkaloids, though the danger of a bromid of the alkaloid being formed and precipitated has been rather exaggerated and is very slight, indeed, if the mixture contains as little as 10 or 12 per cent. of alcohol.

## SUMMARY.

To summarize the most salient points that I wish to impress on your mind:

1. The bromids are valuable and sometimes indispensable agents.

2. Potassium bromid is the worst bromid we possess, its undesirable by-effects by far overbalancing its therapeutic value. Whoever administers potassium bromid in large doses for a long time is simply slowly poisoning his patient.

3. Sodium bromid is a much milder bromid, and when chemically pure strontium bromid is not available sodium bromid is the salt of choice.

4. Strontium bromid is the best of all inorganic bromin compounds. It is a positive (a) anaphrodisiac; (b) it is a positive nervous and genitourinary sedative; (c) it does not upset the stomach; (d) it does not produce acne, or if it does produce a few acne pustules they are mild and transient; (e) it often acts as a mild intestinal antiseptic; (f) it does not irritate the kidneys—rather the contrary, and (g) it has a tendency to diminish albumin in albuminuria and sugar in glycosuria.

5. The dose of strontium bromid ranges from 10 to 60 grains three or four times a day. Occasionally it may be given in doses of one or two drams. It is best prescribed dissolved in distilled water with the occasional addition of essence of pepsin, tincture of cardamon, etc.

6. Strontium bromid is incompatible and should not be prescribed with citrates or sulphates, and it is also best to avoid prescribing it with alkaloids.

7. To obtain the good results from strontium the salt must be chemically pure. If contaminated with barium, as the commercial strontium salts not only frequently but usually are, its effects will be disappointing and its untoward by-effects may be more severe than those of potassium bromid.

12 Mount Morris Park, West.

## DISCUSSION.

DR. WILLIAM STEVENS, New York City, stated that while he was a student with an old army surgeon in 1873, he became accustomed to ordering bromid of potassium frequently. It seemed at that time to be an invaluable remedy. Since that time a careful investigation of some cases has convinced him that he used it too much, and that it is a very unsafe remedy.

DR. C. F. TAYLOR, Philadelphia, thought that the force of habit is well illustrated in the continued large use of potassium bromid to the neglect of sodium bromid, which has long been known to be less injurious and in many respects a better

drug than the potassium salt; but, he continued, the strontium salt is superior to either the sodium or potassium salt, and for several years he has been recommending the strontium salt above all others.

DR. W. E. ROBERTSON, Philadelphia, called attention to the work on diseases of the heart written by Napoleon's physician, Corvisart, in which Napoleon's symptoms are described in such a way as to lead to no more definite conclusion than that his was a case of bradycardia, and probably to-day, instead of receiving bromids, as Dr. Robinson suggests, he would have been subjected to a very careful system of cardio-vascular tracings, where it would probably end.

DR. W. W. TOMPKINS, Charleston, W. Va., was convinced that the bromid of potassium is the most toxic of the bromids. Dr. Robinson's paper, he said, went very exhaustively into the use of the bromid of strontium, except that he failed to mention its use in cases of indigestion. In some of these cases it is largely used combined with aromatics, such as peppermint water. Dr. Tompkins thought that there is not very much individual opinion exercised on the part of the individual prescriber. He is so apt to give only those prescriptions that appear in the text-book. He believes, further, that there is a decided idiosyncrasy in bromids, particularly, and that one can get decided beneficial effects with small doses thoroughly diluted. They are also less dangerous than large doses.

DR. C. B. LOWE, Germantown, Pa., was under the impression that the ill effect from potassium salts is because they act on the heart muscle as strong depressants, and that that is one of the reasons why sodium salts are usually selected.

DR. W. J. ROBINSON, New York, City, emphasized the superiority of strontium bromids over potassium bromid. Through force of habit, he said, whenever physicians think of bromid, they think of potassium bromid, and therefore he emphasized the dangers attending its use. He mentioned the fact that strontium bromid acts as a gastric antiseptic, and it is very good in so-called nervous dyspepsia. Dr. Robinson replied to Dr. Lowe that Dr. Bennion reports that they treated one class of their epileptics with mixed bromids and the other class with strontium bromid only, and they reached the conclusion that the strontium bromid is superior to the mixed bromids.

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## THE INFLUENCE OF THE DUCTLESS GLANDS OVER METABOLISM,

### WITH ILLUSTRATIVE CASES.*

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MINNEAPOLIS.

The increasing elucidation of the functions of the ductless glands and their influence on the morphology of the human organism renders their study most fascinating. While much of the ground is still speculative, enough has been established to show that the thyroid is closely correlated in its action with the pituitary body, the adrenals and the thymus gland. And they must be considered together for a rational view in predicating near and remote effects on the functional activity of the organism, most of which have formerly been ascribed to the thyroid alone. The normal and full development of the individual, physical, nervous and mental, and the preservation of cellular activity, depend, in the ultimate, on the integrity of these organs.

Research, clinical observation and experiment have now fairly established that the parenchyma of the thyroid supplies the blood with a secretion which, by selective application, promotes the activities of the anterior pituitary body. The investigations of Baumann, added to by Mabelle and Ewald, go to show that iodin is probably the most active agent in thyroid secretion, with arsenic a subordinate, but still important element. It is difficult, however, to reconcile all phenomena as entirely explained by the action of these metals alone, for their administration in ordinary forms does not give clinical results, such as we obtain from the use of thyroid material itself. The anterior and posterior pituitary bodies differ materially in structure. The posterior is chiefly neural, being made up of neuroglia, nerve cells and epithelial-cell tubules. The anterior is, in the main, glandular, being comprised of vesicular cavities, lined with epithelium and holding colloid material. These are enveloped in a rich mass of capillaries and lymphatics, strongly resembling thyroid structure. But, although there is a close relationship between them, the action of the pituitary is distinctly different from that of the thyroid. Only a light fibrous reticule separates the anterior from the posterior pituitary body and they share the same capillary and lymph supply.

As shown by the work of Berkley, Hirshfeld and others, only sympathetic nerve fibers articulate with the anterior pituitary structure. Through these filaments, coming from the cervical ganglionic supply by way of the carotid plexus, thence, directly through the cervicothoracic sympathetic chain, the splanchnics and the semilunar ganglia, the pituitary is linked with the adrenals, for the transmission of nervous impulse, and stimulation of their glandular activity. Experiments with pituitary extracts by such observers as Schafer, Howell and Osborne, show clear evidence of stimulation of the adrenal bodies, and both experimental ablation of the cervical sympathetic in animals and the fatal results of their removal in the human subject further prove that the pituitary is the center of energy of the suprarenal glands. Rapid emaciation and death also follow the destruction of the pituitary or the severing of the neural path between these organs.

Further investigation has shown that the pituitary body depends on the thyroid in turn for its stimulus. So when the thyroid is acting in excess, theoretically, it overstimulates this organ, which in turn transmits its added excitation to the adrenals with increased production of the secretion of those organs poured into the blood. When, on the other hand, there is lowered functioning in the thyroid, the hypophysis lacks its normal stimulus, as is also the case when it is inherently weak, or when there is lowered oxidation of the blood from any cause, or when active toxics charge the blood stream.

Although the structure and association of the thyroid and the pituitary would perhaps seem to indicate that their functional product would be identical, close analysis shows that they are not the same, and that phosphorus is the chief element in the activity of the latter, and the fundamental part of both the osseous and nervous systems.

From the beginnings of life to full adolescence the thymus plays the most important rôle. Its evident office is to reinforce the hypophysis during this time of excessive demand, and supplies the major part of the phosphorus to the rapidly building neural and bony structures. It also indirectly stimulates the adrenals in their work as well. Inherent weakness in the thymus, or anything that interferes with its action, impairs the organism's most vital development. In childhood it is

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

normally the most active of all the ductless glands, the thyroids are next and the adrenals last; while in adult life the adrenals are foremost in importance. On this gland (the thymus) the normal unfolding of mentality depends, and statistics like those of Bourneville show that in the great majority of feeble-minded children, not cretins, the thymus is wanting or deficient. It has fulfilled its mission with the completion of adolescence.

The innervation of the suprarenal bodies from the pituitary through the direct channel of the cervicothoracic sympathetic chain has already been pointed out. The stimulation of their activities, then, depends on the integrity of the former gland, which in turn receives its impulsion from the presence of the thyroid secretion, in normal amount and quality in the blood. In the parenchyma of the adrenals a colloid material, a chromogen, is formed and poured directly into the blood going to the inferior vena cava. Thence it reaches the right auricle, directly stimulates the heart muscle, has a remarkable affinity for oxygen and absorbs this gas in the pulmonary distribution as it floats in the blood plasma. The blood elements are bathed in the oxygenated medium, and the hemoglobin is changed again into oxyhemoglobin. This quality of the adrenal secretion makes it the great oxygenating agent of the organism, and is the final purpose of the great system, made up of these organs together with the thyroid and the pituitary bodies. They sustain the action of the heart, respiration, metabolism and cell nutrition. Overaction or defect of structure or function of any of this group of organs gives rise to one or another of a remarkable series of conditions.

The foregoing outline of the now fairly well-established physiologic action and correlations of these glandular structures opens the way to an analysis of the effects of disturbances in the balance and harmony of their activities. And the thyroid naturally claims attention first. In exophthalmic goiter the thyroid is supposably in a hyperactive condition and contributing an excess of secretion to the blood. This overstimulates the pituitary, which in turn excites the adrenals, resulting in an excess of its product being poured into the blood with hyperoxidation the ultimate result and the basis of the syndrome in the earlier stages, while the later manifestations, such as the emaciation, weakness, bronzing and depression, are indicative of insufficiency of the adrenals, exhausted through continued overstimulation.

Myxedema and cretinism naturally group together for consideration. They are the same in underlying causative factors, but occurring at different stages in organic life. Both of them illustrate the results of deficient oxygenation of tissues from failure of the adrenals, due to thyroid deficiency in proper stimulation of the pituitary. The one affects the mature adult, the other the growing child. Thyroid treatment in both simply supplies to the waiting pituitary the stimulus it needs for renewing its energizing power to the adrenals. And the anterior pituitary is the great energy center of the organism, as the posterior is its ultimate sensorium, where nervous shock and stress have their final effect.

The great solar plexus probably first takes the impact of severe nerve stress of all kinds, the waves of impulse traveling most directly and with greatest force to the hypophysis like an overcharge on an electric wire, while there is, of course, some general diffusion, the entire sensory sphere, and especially the central vasomotor supply, suffers from the sharp irritation. In this connection it is interesting to note the bearing of the effects of sudden and profound shocks, as well as the importance of general wear of the nervous system from any cause, with its accompanying excess waste of phosphor elements and evidence of varying degrees of adrenal overstimulation or failure, with such symptoms as tachycardia, muscular weakness, tremors, pallor, conditions of mental exaltation and depression, and the interesting vasomotor relationship between the sexual organs, other erectile tissues and the thyroid. These will receive further consideration in connection with illustrative cases.

One more set of conditions will claim our attention, acromegaly and gigantism. These are analogous to the last two, i. e., myxedema and cretinism, but while the latter are due to deficient thyroid action, with resulting lowered oxygenation, the former are due to overactivity of the pituitary, stimulating the adrenals, with hyperoxidation as the result. The one occurs in youth, the other in mature life. Toxemias, persistence of the thymus, adding to the phosphoric production—hypertrophy of the pituitary often following—and actual new growths in this gland, are the provoking cause of this overstimulation of the adrenals and the excess of oxidation in the tissues.

Absence of the thymus results in mental deficiency. When such cases, also showing lack of physical development, are given thyroid medication, they respond in body growth, but not in mental improvement, and the bones soften at the same time, for it is phosphorus that is needed for both the nervous system and the bones rather than better oxidation, which is what thyroid stimulation gives.

To summarize, then, the present views of the functioning and results of disturbances of this group of organs: Exophthalmic goiter is overstimulation with altered function of the thyroid gland, with increased impulse from the pituitary through its sympathetic innervation of the adrenals, causing hyperoxidation in the organism by excess production of its secretion in the blood. On this later supervenes failure of those bodies from exhaustion.

Myxedema and cretinism are pure results of deficient oxidation from lack of thyroid activity or from innate lack of power in the pituitary due to insufficient phosphorus elements.

Acromegaly and gigantism result from overactivity of the pituitary acting on the adrenals, with abnormal hypernutrition.

Absence of the thymus always predicates deficient mentality in the subject. Its persistence beyond the time when its activity should cease contributes an excess of phosphorus and its results.

Various systemic conditions show clear indications of lack of sufficient oxidation or of phosphorus in the individual, but without going to the point of the actual picture of any of the above states. Chlorosis and other forms of anemia with diminished hemoglobin, pallor and lowered strength show a degree of failure of the adrenals. The various functional neuroses like neurasthenia, or hysteria, with their tremors, excessive perspiration, diminished mental power, easy fatigue, tachycardia and polyuria, point distinctly to lack both of phosphorus and oxygen radicals in the tissues and body fluids from weakened action of the pituitary and the adrenals, and thyroid functioning is probably also implicated. Some things, too, in the behavior of the thyroid, in goiter, fail of satisfactory explanation on the

theory simply of overstimulation in the early stages. It does not explain the fact that medication with thyroid extract in many cases in this stage is signally beneficial. And there is reason to conclude either that there is rather a change in the gland function or that the secretion is altered in composition, becoming toxic, with resulting irritation of the hypophysis, and that thyroid extract contributes the normal agent. The adrenals may, in a measure, be stimulated from other sources than its innervation, and iron and arsenic are of value for this purpose. The iron plays a double rôle, helping to increase the oxygen-carrying capacity of the blood as well as stimulating the oxygenating power from the adrenals.

CASE 1.—*History.*—A man, aged 43, of good family and previous health, came under observation on Dec. 24, 1902. Four months before he had what was called a "boil" on the left side of his neck over the left lobe of the thyroid. It was lanced and had continued to discharge freely, pus and a glary fluid. Another opening occurred at the supra-sternal notch, and also one further round on the left side of the neck. All three were connected by sinuses. Irrigation had been kept up all the time by his physician. He was troubled with cold hands and feet, pain in the lower legs, and sweating and hot flashes on the right side of the body. Appetite good, bowels regular. He had been melancholy and much depressed for the past three weeks, with crying spells, and he had lost much flesh.

The left side of the neck showed livid discoloration, the normal outline flattened, and the surface indurated. There were three sinus openings. The pulse was weak and slightly rapid. The left lobe and isthmus of the thyroid had evidently been largely destroyed. He was not getting sufficient thyroid action, and oxidation was evidently suffering. The sinuses were allowed to heal at once.

*Treatment.*—He was put on such general tonics as organic iron and manganese, and thyroid extract in two-grain doses was given three times a day. Improvement began promptly. He was under observation for about two months. The melancholic condition entirely cleared up, he gained flesh, and the color, which had been dusky, became normal. He went home to South Dakota, continued to use the thyroid for some time longer and has remained perfectly well.

CASE 2.—*History.*—A young woman, aged 22, seen in June, 1903, of a very interesting neurologic family history. Maternal grandmother living and has goiter and edema of legs. Maternal grandfather had kidney trouble. Paternal grandmother died of asthma, paternal grandfather was rheumatic. Maternal granduncle had some form of paraplegia. A maternal aunt had goiter, another had anemia, goiter and "sick headaches." A third maternal aunt has a goiter, and another is subject to "fainting spells." Still another had an attack of delirium. Three paternal aunts died of rapid tuberculosis. A maternal cousin died in convulsions and another with chorea. The patient's mother is anemic, has numbness in the right leg, muscular cramps and "sinking spells." The subject herself was frail till 3 years old, rugged from then till two years before coming under control. Then began to feel weak and tired, with peculiar precordial feeling. She noticed beginning enlargement of the neck at the same time. There was insomnia, bowels regular. Prominence of the eyes was noticed. Severe attacks of headache began six months before, sometimes lasting for days. Menstruation normal. Was doing heavy lifting at this time. Free perspiration and easy flushing. She was well developed and nourished, but had a peculiar pallor, a marked goiter, the neck measuring seventeen and one-half inches. Pulse 100, bounding and irritable, slight tremor and very slight prominence of the eyes. There was an area of paresthesia on the right thigh, quite marked edema at times, of the lower legs, and marked general sensitiveness of the body surface.

*Treatment.*—She was put on thyroids, unguentum hydrargyri oxidi rubrum, galvanism over the gland, the cervical ganglia and the precordium thirty to forty minutes three times a week, and a combination of strophanthus, digitalis and nitroglycerin. There was great difficulty for a time in controlling the attacks of head pain, which had the appearance of being extreme. They were accompanied by writhing and twitching, which had an almost involuntary look, and there was also much cramping of the legs in the attacks. The relationship between these attacks and meteorological changes was very striking.

She was under continuous observation for a year and a quarter. Improvement in all conditions was fairly constant. The goiter diminished in size, the edema improved, the heart action steadied. Gelsemin in 1/134 gr. doses every hour, controlled the head pain most successfully. These attacks came further apart. Strength and endurance improved. The pallor gave way, and she began taking on flash. Thyroid medication was constant. When dismissed the circumference of the neck had diminished over three inches, and only the isthmus of the gland remained slightly prominent. The heart was normal, the head pain had ceased, she had gained 30 pounds. She has since remained well.

This was a clear case of exophthalmic goiter, with some hysteric coloring. The exophthalmic goiter was evidently in a stage of overstimulation from the thyroid. Theoretically, thyroid medication was contraindicated, but she was kept on full doses for a period of over one and one-half years, with perfect results, and so far I have not seen a single case aggravated by its use.

CASE 3.—*History.*—Young lady, aged 24, first seen in February, 1905. Her father was a melancholic and committed suicide. He was also a heavy drinker. Patient has never been strong. Always gloomy, inclined to worry. Did not mature till 17. Had a "blue spell" then, with suicidal impulse, again at 18, and again at 20. Insomnia during the attacks. Began to be despondent a month before coming under treatment. Suicidal impulse. Gloom and abstraction. She was pale and had a depressed expression, was poorly nourished, pulse rather weak and nervous manner, sluggish bowels and sleeping poorly.

*Treatment.*—She was put on such nerve sedatives as codein phosphate, the valerinates, hypnotics, and nucleins, with heart tonics. Her condition continued in an indifferent way, with slight improvement for some months. In June, 1905, she was put on full thyroid feeding. She immediately began to gain in a remarkable way in general condition, to feel more cheerful, better strength, and putting on flesh. Improvement continued steadily and in about five months she had gained 25 pounds, was in normal mental state, except for the fear that the trouble might come back. Her color did not improve with the gain in flesh, and instead took on a peculiar waxy white look. With the use of organic iron and the phosphates, her color became good.

The peculiar pallor shown in this case has been noted several times in patients on thyroid feeding and is difficult of explanation.

CASE 4.—*History.*—Arthur B., a boy, 15 years old, was first seen June 27, 1904. Nervous temperament and rheumatism on father's side. About one and a half years ago he began to be restless, made occasional peculiar remarks, and was careless in his habits. These symptoms disappeared in a short time, similar ones recurring at intervals. He is unusually bright in school, has a ravenous appetite, and does everything in a hurry. He is sturdy looking, well developed and nourished. He is restless and it is difficult to hold his attention. Heart action and pulse normal. Slight reflex and myotatic irritability. Inclined to be surly. He proved rather hard to control, as he was determined to be too active.

*Treatment.*—Varying combinations of medication were resorted to at times, but the main lines were the use of codein phosphate, trional, nucleins and lecithin, and other forms of phosphorus. Thyroid feeding was begun at once and kept the most constant element of the treatment. He did not do as well when it was suspended. And when it was combined with some

form of phosphorus he made the best progress. With some variations he made good gain and reached full recovery after a year and a half of attention, and resumed his school work and all other normal activities.

CASE 5.—*History.*—A girl of 22, unmarried; considerable neurophatic taint on the mother's side. The patient was well as a child. Three years ago was overtaxed. Became hyperesthetic, easily startled; dysmenorrhea came on. Marked insomnia, headache, poor memory, easily fatigued. Dysentery for six weeks a year ago, and vertigo. She had nervous "spells" with screaming, palpitation and numb feelings in a hand or foot at times. She was fairly well developed and nourished, pale, nervous manner, reflex irritability. Left eye prominent, with dilated and irregular pupil-old injury, heart regular, pulse 76. Tremor of hands and thyroid slightly prominent.

*Treatment.*—She was put on accepted lines of control, with ordinary medication, massage, electricity, and the like, making only fairly good progress. After about six months she was put on thyroid feeding, experimentally, with other conditions going on just as before. She soon began to gain rapidly in every way. The capricious appetite became better, she slept well. The nervous storms came at much longer intervals and then ceased. Her nervous tolerance improved, she grew stronger, and began to take on flesh rapidly, gaining over 30 pounds in a few months. The thyroids were then suspended at intervals and reinstituted, always with distinct results. This case also showed the peculiar pallor referred to in another case.

CASE 6.—*History.*—A young girl of 17, seen first in November, 1906. There was no material nervous taint. She had never been rugged. About a year ago received a strain of the abdominal muscles; had been studying hard, began to run down, became very restless and fretful, sleeping poorly, constant gnawing of the finger nails. She was very slight, exceedingly restless, with a frightened manner and expression, crying easily, and very excitable. Pulse somewhat rapid and weak.

*Treatment.*—She was put on hypnotics, phosphorus combinations, arsenic and thyroid feeding at once. Improvement followed with striking rapidity, the nervous agitation subsiding; she began to sleep and eat well, complete recovery of strength and nervous tone followed, with good gain in general nutrition and flesh, although not as notable an amount as in some other cases.

These illustrative cases have been selected to show the application of the deductions in the foregoing part of the paper. Case 1, with partial destruction of the thyroid gland, showed the clear syndrome of adrenal incompetence with deficient oxygenation. The result of thyroid feeding was complete and prompt, and enough of the gland remained to make it permanent. Case 2 was a characteristic one of exophthalmic goiter, with added hysteric coloring. The goiter was undoubtedly in the stage of so-called overstimulation, yet the thyroid feeding gave the happiest result. This case also shows the remarkable effect as a nutrient tonic which it possesses in common with thymus extract. Case 3, one of simple melancholia, shows the indications of suprarenal inadequacy with lowered oxygenation present in other conditions than the organic ones usually considered, and illustrates the value of stimulating this particular glandular system. The power over nutrition is also powerfully shown in this case. Cases 4 and 6, on the borderland of developmental insanity, illustrate its bearing in the conditions of threatening failure of mental evolution. In these cases phosphorus from the pituitary and thymus plays as important part as the thyroid with its iodin, for in these cases the thymus is presumably more at fault, and is not supplying its phosphor product fully enough to meet the demands of the rapidly developing nervous system. Case 5, one of hysteroneurasthenia, shows the evident lack of functioning activity in the thyroid-pituitary-adrenal group. In these cases there is a vicious circle. The condition of nerve exhaustion is accompanied by excessive waste of phosphorus elements, the lowered tone diminishes the adrenal stimulus, and the oxidizing power, with its lessened nutrition of all structures and autointoxication is present. Thyroids and lecithin elements are indicated here, as they are both needed to renew the activity first of the pituitary body, the great energy center of the organism, and through it to increase the secretory activity of the adrenals and the part they play in sustaining the great vital functions.

### DISCUSSION.

DR. J. MADISON TAYLOR, Philadelphia, said that one point that Dr. Crafts in all probability did not have time to bring out is the fact that these glands are classed with organisms which are regarded as primary—the lungs, heart and liver—and that the functions extend throughout the whole length and breadth of the body. The applicability of this principle is very much larger than the cases described by Dr. Crafts, relating largely to the organs of this particular character. The point which Dr. Taylor emphasized is that through a theory which we can not understand this group of organs, which Dr. Crafts has outlined so well, controls practically the whole of the body organisms, more particulary in dealing with the volume of tissue regulation through the volume of the blood, and the regulation of the depressed functional cavities through the body.

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## ACID AUTOINTOXICATION AND SYSTEMIC DISEASE, THE CAUSE OF EROSION AND ABRASION.*

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The prevailing opinion has been, and is taught to-day, that the cause of diseases of the mouth, jaws and teeth are of local origin. Peculiarly is this true of erosion and abrasion, judging from the literature. It has been my purpose in life to devote my time to researches to disabuse the minds of members of the profession of this dormant notion. While it is possible that local factors may enter into the etiology, yet the great factor in all cases of dental pathology is constitutional rather than local. In this paper I shall furnish another proof of these assertions. No one factor, either local or constitutional, can be accepted as the cause of a given disease. Thus, tooth decay is due to lactic acid ferment; the great cause, however, is evolution and degeneration. Outside of the etiology of tooth decay perhaps no subject has caused so much anxiety to the members of the profession as that of erosion and abrasion. The two terms were used by early writers to designate the destruction of the tooth or teeth, erosion being a gradual wearing away of the grinding surfaces of the teeth, abrasion the destruction of the surface of the teeth in connection with the mucous membranes of the mouth. The two terms employed in the light of my researches really mean one and the same thing, as I shall demonstrate later. It is well, however, to retain the two terms because they indicate to a certain extent the location of tooth destruction.

In my papers, "Pulp Degeneration,"[1] "Constitutional Causes of Tooth Decay,"[2] "Constitutional Causes

* Read in the Section on Stomatology of the American Medical Association at the Fifty-eighth Annual Session, June, 1907.

1. THE JOURNAL A. M. A., Aug. 6, 1904, p. 385.
2. Dental Digest, December, 1903.

of Tooth Decay, Erosion, Abrasion and Discoloration,"[3] I demonstrated that the teeth at different periods of life soften and discolor in circumscribed areas, or as a whole, as a result of nerve end and artery degeneration, due to disease, especially nerve diseases, neurasthenia, nervous breakdown and faulty nutrition. In many of my earlier papers I have shown that in nearly every diabetic, tabetic or paretic dement, erosion and abrasion are present. These changes in nerve end and arterial degeneration, due to malnutrition and autointoxication, affect the pulps of the teeth and alveolar process and cause destruction of cement substance between the enamel rods and alter the vitality of tooth structure.

Prof. James Truman of the University of Pennsylvania did research work on erosion many years ago. He was dissatisfied with the many theories then extant and made some researches along this line. Satisfied that the condition was the result of acid action and had not its origin in the cause of caries, he undertook a series of testing mouths. The result demonstrated that there was no positive reaction in the mouth during the day. The exceptions were not worthy of consideration. He then sought to discover when and where acid was formed, as acid, in his opinion, it must be. Another series of tests were made at night, or rather before rising in the morning. He naturally began on himself and found invariably a distinct acid response. Then he secured the cooperation of a number of students, they to bring the results to him. This confirmed the conclusion that at night, when the secretions are quiet and the alkaline saliva practically ceases to flow, fermentation sets in and a marked acid reaction takes place. It is during these periods of rest, therefore, that the greatest amount of tooth destruction takes place. The mucosa, falling on the anterior teeth and frequently on the buccal surfaces of the posterior, slowly but surely eat a place in the enamel. The polishing is accomplished by the constant passing of lips, tongue, food, etc.

The treatment he adopted seemed to prove the acid theory. He used in all cases a magma of precipitated chalk (chalk and water paste), placing it under the lip at night. The result was a cessation of the destruction. His wife's nephew at eleven began to show destruction of the enamel on both laterals. He was too young to have the cavities assume the phenomena of erosion, but he placed him under the chalk treatment. He is now over thirty and the teeth have remained as they were at that time. Abrasion is due not to mechanical wear alone, but to the combination of acid action and attrition.

Dr. Michaels of Paris has done considerable work on hyperacidity of the saliva and has determined that when the blood becomes of a lessened degree of alkalinity because of the accumulation of acid products not eliminated from the system the secretions and excretions of the glands become acid in reaction.

I accept the acid theories of Truman and Michaels of erosion and abrasion, that the acid is deposited on the teeth from the mucous glands and gums, that the action of acid on the teeth is greater at night than in the day because the saliva practically ceases to flow at night. But does not the saliva which normally is alkaline sometimes become acid? Is the acid from the mucous glands due to "fermentation?" Do chalk preparations or other antacids applied under the lips night or day or both stop the formation of acid and thus prevent erosion and abrasion? Clinical experience says no. That the action of acid on the teeth is retarded when the treatment is faithfully conducted for months and years is true. When occasionally applied or when applied for a short time the results are only temporary.

The causes which produce erosion and abrasion may be one of three factors or all three may be necessary. First, change in tooth structure, due to systemic changes and disease; second, secretion of acid by the mucous glands; third, friction by the action of the teeth of one jaw against those of the other, from foreign bodies or by action of the lip or cheek. Soft areas, due to change in the teeth by systemic diseases may be worn away by the action of acids direct from the glands or by the action of the lips and cheeks or by friction of foreign substances. Acid secretions alone will, in time, destroy normal tissue. Friction by foreign agents or the teeth of one jaw against those of the other without acid will also destroy normal tissue in time.

Since local applications will not destroy the acid mucus or restore acid saliva to alkalinity or its normal condition, the question naturally arises: How is this acidity produced? In my studies on the urine in relation to autointoxication causing interstitial gingivitis I was struck by the coincidence of the abnormal degree of urinary acidity in many cases. In these mouths erosion and abrasion were frequently observed. This important discovery led me to examine the urine in every case in which erosion and abrasion were present in order to discover if acid intoxication was present. One phase of autointoxication, that of acid intoxication, in relation to erosion and abrasion and incidentally interstitial gingivitis is the subject of this paper.

The greatest destruction of the teeth was on the labial, buccal, grinding and palatal surface as observed in diabetics, tabetics, paretic dements and luetics.

The degree of acidity of the urine in my own patients and those of physicians and in public institutions ranged as follows:

I. DEGREE OF ACIDITY IN DIABETICS.

Through the kindness of the Columbus Medical Laboratories I was allowed to make a report of the urine of diabetics sent to them for examination.

Three hundred and ninety-four examinations were made. Two passed 4 degrees, two 6, one 7, two 8, six 10, five 12, sixteen 14, one 15, fifteen 16, one 17, thirteen 18, twenty 20, one 21, twelve 22, one 23, ten 24, two 25, fourteen 26, sixteen 28, one 29, twenty-two 30, seventeen 32, thirteen 34, four 35, twenty 36, two 37, eleven 38, two 39, thirteen 40, one 41, eight 42, seven 44, two 45, eight 46, two 47, five 48, five 50, five 52, one 54, twelve 56, one 57, four 58, five 60, one 62, one 63, three 64, two 66, two 68, two 70, three 72, one 74, one 75, one 100, two 104, one 120.

*Acetone.*—Of this number of cases, only 19 were examined for acetone. In 11 acetone was present, in 8 absent. Thirty-two were examined for diacetic acid; in 6 it was present and in 26 absent. Twenty-four were examined for B-oxybutyric acid; in all it was negative.

*Uric Acid.*—The examination for uric acid of 370 patients showed it present to a greater or less degree in 56 and negativ' in 314, or about 15 per cent. had uric acid.

II. DEGREE OF ACIDITY IN TABETICS.

Of thirty-five tabetics one passed 5 degrees, one 6, four 9, two 10, one 11, one 17, two 19, two 20, one 22, one 46, one 48, one 49, one 50, one 56, one 62, one 73, one 76, one 78, one 81, one 82, one 84, one 97, one 99, one 112, four alkaline. Those patients having the alkaline urine had marked erosion of the teeth, showing that at some time there had been a high degree of acidity. Cystitis caused the urine to become alkaline. All showed indican to a greater or less extent.

3. Dental Cosmos, November, 1904.

III. DEGREE OF ACIDITY IN PARETIC DEMENTS.

Twenty-one males and four females were examined. Three passed 5 degrees, one 7, three 8, two 9, one 10, one 11, one 12, one 13, one 15, two 16, one 17, one 22, one 28, one 34, one 38, one 39, one 44, one 51, one 52, one 70. The patients were in a quiet state. If the urine could have been examined after excitement or an explosion, the degree of acidity would have been greater.

IV. DEGREE OF ACIDITY IN LUETICS.

In one it was 24, one 96, one 105, one 116.

V. DEGREE OF ACIDITY OF PRIVATE PATIENTS.

In my own practice 130 patients were examined. Three were also sent to me by Dr. J. F. Keefe, of Chicago. All ranged from 11 to 84 years of age. All showed erosion and abrasion to a greater or less extent. Three had 2 degrees of acidity, three 8, two 10, two 11, seven 12, two 14, two 15, five 16, six 18, two 19, eight 20, five 22, five 24, six 26, four 28, two 29, six 30, two 31, four 32, two 33, three 34, nine 36, two 38, two 40, two 44, five 46, one 47, two 48, two 50, five 52, five 54, four 58, three 60, two 62, five 70, one 90, one 115, one 117, one 132. Only 4, or 3.8 per cent., had uric acid.

I quote here from a previous paper, "Interstitial Gingivitis Due to Autointoxication,"[4] my first fifty patients' degree of acidity: one had 11 degrees, two 12, one 14, two 15, one 16, two 17.5, four 20, one 22, one 24, five 30, seven 36, two 40, two 44, one 46, two 56, one 58, one 59, one 60, two 62. Three per cent. had uric acid, all had indican.

The method of obtaining the degree of acidity of the urine is given by Neubauer and Vogel.[5] The instruments necessary for this work are one burette 50 c.c., one wooden stand, one Barnes dropping bottle, one 10 c.c. graduate and one small glass. Place the burette in the wooden stand in an upright position, fill the tube with the 1/10 normal sodium hydroxid solution to exactly 0. The degree of acidity is obtained by taking 10 c.c. of urine specimen, measured in the graduate glass, then placed in the small glass; add four drops of phenolphthalein solution as indicated, and then add drop by drop the 1/10 normal solution sodium hydroxid until a slight pinkish color is produced. Having noted on paper the number of c.c. of the sodium hydroxid in the burette before and after the pink color is obtained, the number of cubic centimeters displaced multiplied by 10 (in order to find the number c.c. sodium hydroxid necessary to reduce 100 c.c. urine) equals the degree of acidity. Each step in this operation must be carefully performed; instruments and surroundings must be kept perfectly clean in order to get good results.

The normal degree of acidity of the urine is from 30 to 40 degrees. When the degree is below 30 (the difference between the degree indicated and 30 shows the degree retained in the system) it indicates either renal insufficiency or excessive suboxidation products producing renal strain. In cases in which the degree of acidity exceeds 40 there is excessively imperfect oxidation which, irrespective of the types of acid, underlies, as is now pretty generally recognized, severe constitutional stress allied to that of diabetic acidosis.

There are two great functions of the kidney—the excretion and elimination. Excretion does not necessarily imply elimination. Indeed, many of the polyuric states (increased excretion), like diabetes, lues and the states with nervous urine, are attended by decided decrease of eliminatory power. Imperfect oxidation states may act in two ways on the kidney. They may increase its excretory powers at the expense of its eliminatory power, causing what is known as renal insufficiency. In this case a lessened proportion of the substances usually eliminated occurs in the urine, the rest being retained in the circulation. On the other hand, an increased proportion of the products of sub-oxidation beyond normal generally occurs when there is an increased production of these in the system. A decreased degree of urinary acidity is attended by symptoms due to the retained acids. An increased manufacture of acid in the system is attended by an increased degree of urinary acidity, which increased degree, however, very often indicates a disproportionate elimination of the acid products actually present in the system. The degree of acidity must be obtained as soon as possible, since the free acids or alkalies cause fermentation of the urine.

It is claimed that fruit acids are converted into alkaline substances in the system. This is only partially true. The liver and tissues become overworked. Acids which are taken into the stomach as food are in excess and are stored up in the system.

The fruit habit (especially grape fruit) so generally indulged in to excess in America is producing havoc with the alveolar process, gums and teeth.

One case is sufficient illustration of the many I am called on to treat.

*Patient.*—Woman, aged 27, had her teeth and mouth put in good condition in January, 1907. On February 16 she returned with what she thought a cavity at the cervical margin of the left superior cuspid.

*Examination.*—I found the gums inflamed and receding, not only at that particular location, but about all the teeth. Previous to this, the gums and mucous membrane were in fairly good condition. The litmus test showed the mucus to be very acid. There was no cavity, only sensitive dentine. Much gas was passing from the stomach. On interrogation in regard to her food she informed me she had been eating grape fruit every morning for three weeks. Urinalysis of a twenty-four-hour specimen showed the degree of acidity to be 14. Sixteen degrees were retained in the system. The recession of the gums and the sensitive dentine were due to the acid retention.

Wherever there is an endogenous or an exogenous poisoning with which the liver is unable to cope and the strain is thrown on the kidney, elimination proceeds through the skin, nasal and buccal mucous membranes and hence through the alveolar process, since the last contains end organs in which useless products settle. This produces, for example, the blue line of lead poisoning, the green of copper and red of mercury.

The tendency to graver diseases as here presented is shown in interstitial gingivitis and absorption of the alveolar process.

The acidity referred to in this paper is not to be confused with uric acid, as I have already shown in this and other papers. In office practice about 3 per cent. of patients have uric acid, while 15 per cent. of patients suffering with disease, such as diabetes, for example, have uric acid. All persons, sick or well, at some period have acid autointoxication.

Dr. J. H. Salisbury[6] in his article "The Alkalinity of the Blood in Its Physiologic and Pathologic Relations" says:

The alkaline reaction of the human blood is maintained in spite of the constant entrance into the blood of acids, either taken as food or generated by fermentation in the intestine or produced as the result of metabolism in the various tissues. . . . All these acids entering the blood tend to reduce its alkalinity, and if this tendency were not counteracted the reaction of the blood would soon become neutral or even acid. The mechanism by which the reaction of the blood is regulated

4. THE JOURNAL A. M. A., July 28, 1906, p. 261; Dental Digest, August, 1906.

5. Guide to the Qualitative and Quantitative Analysis of the Urine. English edition; William Wood & Co., 1879.

6. Medicine, July, 1899.

and its alkalinity maintained is of the greatest interest and practical importance to the physician. . . . The compensation is mainly secured by the excretion of acid sodium phosphate, which is produced by a reaction between sodium bicarbonate and di-sodium hydrogen phosphate, which results in the passage of the acid phosphate into the urine and the retention of the more alkaline sodium carbonates in the blood.

Since the skin and the mucous glands of the mouth become acid, it is suggested by Brubaker[7] that the waste products of faulty metabolism, occurring in gout and kindred conditions, floating through the capillaries of the labial glands, produce irritation and the production of an excess of carbon dioxid. This exists in the cells of the gland as carbonic acid, $H_2CO_3$, and, combining with the alkaline salt sodium phosphate derived from the blood, the following reaction occurs:

| Neutral sodium phosphate. | | Carbonic acid. | | Acid sodium phosphate. | | Sodium bicarbonate. |
|---|---|---|---|---|---|---|
| $HNa_2PO_4$ | + | $H_2CO_3$ | = | $H_2NaPO_4$ | + | $HNaCO_3$ |

The acid sodium phosphate formed attacks the phosphate and carbonates of calcium composing the teeth in a double reaction after the manner shown in the following equation:

| Calcium phosphate. | | Acid sodium phosphate. | | Sodium calcium phosphate. | | Acid calcium phosphate. |
|---|---|---|---|---|---|---|
| $Ca_3(PO_4)_2$ | + | $H_2NaPO_4$ | = | $NaCaPO_4$ | + | $2HCaPO_4$ |

The acid calcium phosphate is further acted on by additional molecules of the acid sodium phosphate (dihydrogen sodium phosphate) as follows:

| Calcium phosphate | | Acid sodium phosphate. | | Sodium calcium phosphate. | | Diacid calcium phosphate. |
|---|---|---|---|---|---|---|
| $2HCaPO_4$ | + | $H_2NaPO_4$ | = | $NaCaPO_4$ | + | $Ca(H_2PO_4)_2$ |

The diacid calcium phosphate is freely soluble and doubtless washed away.

To note the acidity of the mouth take a strip of litmus paper, hold it over ammonia until it is quite blue and apply it under the lips on the gums, holding it in position for a minute or two. If the mucous be acid it will turn the blue paper red, if it is alkaline the paper will remain blue. This method is only partially satisfactory and means very little so far as the urine is concerned. A more satisfactory method for the urine is that already mentioned.[5] A still more simple method (since the agents are at hand) is to use phenolphthalein as an indicator. Place a small quantity of urine in a glass, add drop by drop the phenolphthalien; if acid it remains colorless, if alkaline it is pink. If the litmus paper shows the mucus to be acid and there is an abnormal degree of urinary acid reaction the chain of evidence is complete. Professor Truman, therefore, is entitled to credit for his early researches in this direction.

The literature on the subject of acid autointoxication is meager and does not extend back many years. Different terms have been substituted for acid intoxication in later years, such as acetonuria, acetonemia, aciduria and acidosis. Acetonuria was first recognized in diabetes by Petters in 1857. Garhardt about 1880 demonstrated acetone associated with diacetic acid, B-oxybutyric acid in the blood in diabetic patients. The so-called acetone bodies, acetones, diacetic and B-oxybutyric acid are symptoms of disordered metabolism. All three of these acids are closely related. According to T. Stuart Hart[8] by oxidizing B-oxybutyric we obtain diacetic acid and when diacetic acid is heated to 100 degrees C. it is easily decomposed into acetone and carbonic acid. Later it has been shown that acetonuria occurs under other conditions and in other diseases, such as scarlet fever, erysipelas, diphtheria and pneumonia. All the depressed mental states, whether occurring singly or in compound psychoses, like paretic dementia, cyclothymia and katatonia, are attended by suboxidation, as Meynert long ago showed, and hence as Coriat[9] has lately proved by acid states, acetone, diacetic and B-oxybutyric acid.

Dr. James Kelly[10] has shown that acetone, diacetic acid, B-oxybutyric acid in the urine have been recognized in the following conditions: (1) In the late stages of diabetes mellitus; (2) in starvation; (3) in malignant growths; (4) in digestive disturbances; (5) in septic processes, general or local; (6) in infectious fevers; (7) in pregnancy, associated with a dead fetus; (8) in certain psychoses; (9) in autointoxications; (10) in chronic morphinism; (11) in phosphorous poisoning; (12) following general anesthesia; (13) in injuries to the cerebrospinal system; (14) in shock due to injury; (15) in cases associated with fatty liver, and (16) probably in cases of uremia.

Research work on acid intoxication and the acetone bodies is in its infancy. Most of the work of value has been done since 1900 and the greater part has been written in the past two years.[11] For our purposes in this paper on erosion and abrasion we must limit discussion to acid intoxication, since examination of urine of ordinary office patients suffering with erosion and abrasion does not contain the acetone bodies.

With the urine, in evolution, comes an increased oxygenation, and with this a decreased acidity in the urine excreted.

The normal degree of acidity in the urine is from 30 to 40. Unnatural methods of living, such as excesses in eating and so-called simple food and alcohol abuse, will cause an excess of the acidity in the system. Disease or pregnancy will also change the degree of acidity. For example, in the simple cold of a child five years of age the degree of acidity was 90. This degree of acidity was readily reduced in ten days; therefore, the effect on the teeth, gums, and alveolar process is *nil*. On the other hand, in a case of pregnancy in which an abnormal degree of urinary acidity may extend over a period of from six to nine months, a destruction of the alveolar process and teeth is bound to occur. Since the alveolar process, gums and teeth are transitory structures, as well as end organs, the destruction is more rapid than in other parts of the body. The gums are especially affected in systemic changes, since they possess sensitive glands.

What then must be the condition of the urine in those persons who have syphilis, tuberculosis, Bright's disease, diabetes and nervous disorders, and in high livers whose abnormal degree of acidity has continued for many years. It will readily be understood how almost instantaneously erosion and abrasion may begin on the teeth and how almost instantaneously the destruction will cease on change in methods of living and a restoration to health. A sea voyage, a trip to hot springs or a complete change in environment will reduce the acidity of the urine to nearly or quite normal. The secretion of acid from the mucous glands and gums will cease. This accounts for the fact that in some of the examinations the urine was normal in acidity. The fact that erosion and abrasion were slight or severe in a given case and uranalysis showed it to be normal does

7. Internat. Dental Jour., December, 1894.
8. Amer. Journal of the Medical Sciences, August, 1906.
9. Amer. Jour. of Insanity, April, 1902.
10. Ann. of Surg., February, 1905.
11. Ann. of Surg., February, 1905

not prove that it had always been so. In some of the patients, especially those with nervous diseases, the urine was found to be alkaline. In these cases the destruction of the teeth was unusually marked. The degree of acidity was not checked in the system, but the patients were suffering from cystitis and the urine became alkaline in the bladder.

In any condition in which there is an irregular strain on the heart in circulation as there is in business and other strains there occur imperfect oxidation, imperfect hepatic action and imperfect renal elimination. All these conditions, together or singly, produce metabolic changes underlying acid states.

In the papers mentioned at the beginning of this article a number of patients were described, who, from overwork, grief, mental depression and nervous diseases, had rapid decay of the teeth, destruction of the alveolar process (interstitial gingivitis), erosion, abrasion and discoloration. I have gone into detail as to the cause and demonstrated microscopically artery and nerve end degeneration of the pulp and alveolar process which produce change in tooth structure, softening of the entire structure or areas.

The lessened degree of alkalinity of the blood or acid intoxication of the system causes contraction of the arterioles, lessening the blood supply and causing vasomotor neuroses and arteriosclerosis in end organs, such as the pulp and alveolar process. The teeth change color with age, just as the excretory organs become senile and sluggish and the blood thin, the result of acid autointoxication. In sickness also teeth that were once hard change color, soften and decay. Acid autointoxication is caused by over-production and want of proper elimination. In pregnancy faulty metabolism and acid intoxication are present, the teeth discolor and soften, and decay is rapid, but in most cases the system is restored to normal after childbirth and the teeth, to a degree, recover their color and strength. In close and frequent pregnancies, however, the effect is more demonstrable and lasting. In scarlet fever, Bright's disease often results from kidney insufficiency, the teeth decay rapidly, and interstitial gingivitis is very marked. The system is over-charged with acid autointoxication. It would seem that the acidity of the blood acted directly on tooth structure from without and within, causing discoloration, softening and destruction of cement substance between enamel rods, as particularly observed in diabetics. In luetics, diabetics, tabetics and paretic dements these changes are most marked.

There are many other diseases, particularly those of faulty metabolism, in which similar results are obtained. Pitres and Vaillard have shown that in typhoid fever nerve end degeneration takes place. Later observations have shown changes in nerve ends and arteries in tuberculosis, leprosy, diphtheria, alcoholism, carcinoma, inanition, marasmus and arteriosclerosis, in the so-called rheumatic neuritis of the facial nerve and inflammation due to articular rheumatism, gout, puerperal infection and drug poisons. To illustrate how effectually nervous breakdown will cause nerve end and arterial degeneration, tooth softening and discoloration, I will describe one of my own cases.

*History.*—Mr. A., aged 60, from mental and physical overwork broke down in August, 1906. He had been a patient for thirty years and had been under constant observation. His gums and teeth were in perfect condition, he had not had a tooth filled or gums treated for twenty years. The teeth were cleaned regularly every six months and were as hard as flint. After the breakdown, severe pains were felt throughout the body, especially in the lower and upper extremities. A space on the left leg above the knee, about the size of the hand, was cold and numb. A gold filling in the mesial surface of the right central incisor (which had been in forty-two years) dropped out without decay. Disintegration of the enamel is taking place about the approximal filling in the left central. The enamel around gold fillings in the left inferior first and second bicuspids, the first and second molars have already commenced to disintegrate and erosion is plainly visible. The gums and alveolar process are beginning to recede about the left superior molars. Litmus tests show marked acidity of the gums and lips. Urinalysis at different periods between Dec. 1, 1906, and Jan. 1, 1907, shows the following degree of acidity: 11, 12, 20 and 32 degrees, and that from 10 to 19 degrees of acidity were retained in the system until it was reduced to normal, above 30. How long the excessive acid state had existed in the patient I am unable to say, probably for some time.

In some patients nerve end and arterial degeneration are so rapid that pulps of the teeth are destroyed and erosion causes exposure of the empty pulp chamber. In others the arteries are destroyed, leaving sensitive filaments of nerve fibers in the pulp chambers. Since the constant use of the tooth brush or friction from other causes, with a slight acidity of the secretions of the mouth, will destroy healthy, normal tooth structure, how much more quickly will it destroy areas or entire tooth structures when changed by disease? When pulp degeneration and destruction of the alveolar process occurs the tooth above the healthy line of the peridental membrane is dead. This accounts for those anomalies referred to in Figures 106, 107 and 108,[12] in which all the teeth are worn to the gums, and in those cases in which the carbonates and phosphates are removed and only the animal tissue resembling horn remains. Nerve end and arterial degeneration only will account for the frequent occurrence of erosion and abrasion of the central incisors, upper and lower, in many cases, while all the other teeth are normal.

The gums, alveolar process and the pulp of the tooth being end organs as well as transitory structures, are the first to feel the influence of metabolic changes and autointoxication. Destruction of tissue is the result.

In these days of prophylaxis the dental profession, therefore, has the advantage over the medical in the fact that the laity seek the services of the dentist two or three times a year and can be forewarned of the approaching storm, while the physician is not called until the storm has already broken. The subject of interstitial gingivitis in relation to acid autointoxication was discussed in a previous paper.[4]

## TREATMENT.

The treatment consists in reducing the acidity of the urine to normal—30 to 40 degrees. This is accomplished by giving the patient (an adult) from 10 to 30 grains of sodium bicarbonate or one-half teaspoonful (45 grains) of sodium chlorid after meals, or sodium phosphate, one teaspoonful morning and evening. Calomel, 1/10 grain, may be given every two hours until a grain is given to stimulate the liver and cleanse the bowels. This may require from one to four weeks or even longer. A frequent uranalysis will determine the time. If indican be still present intestinal antiseptics are indicated. From eight to ten glasses of water should also be taken.

I am under obligations to the following physicians for their assistance: Dr. Sidney Kuh, Cook County Hospital; Dr. S. M. Robin, Cook County Hospital for the

12. Amer. System of Dent., cxl, pp. 415 and 416.

Insane and Poorhouse; Dr. W. A. Evans, Columbus Laboratories; Dr. Adolph Gehrmann, Columbus Laboratories; Dr. J. F. Keefe; Dr. J. G. Kiernan.

## DISCUSSION.

DR. JAMES TRUMAN, Philadelphia, said that while he has been interested in this subject for the past thirty or thirty-five years, his interest has not been altogether from the standpoint of Dr. Talbot's work. In the earlier period of the consideration of erosion the subject was made a matter of speculation, and men would be found to say that erosion must result either through acid or alkaline action, and no one ever took the trouble to find out whether this is true. Dr. Talbot, he said, stated his views based on certain investigations and a long series of tests made on many individuals, and yet he failed to discover, what has so often been stated, that occasionally the secretions of the mouth are acid. Then, necessarily, it logically followed that examination should be carried to other periods in the twenty-four hours than the daytime. It was then found that an acid reaction was invariably present during the period of rest—the night time. There was no exception in the thirty years that Dr. Truman has been experimenting in this direction—that there was no case of an alkaline or neutral reaction during the day. Therefore, he said, there is but one conclusion to be reached: that in all cases of erosion and of caries, the largest amount of destruction occurs during periods of rest, when the pure saliva, which is alkaline, is absent, resulting in a dry mouth, and conditions which are present only at night. Dr. Truman attributed the change to fermentation.

Later Dr. Kirk called attention to the fact that if litmus paper be taken and placed under the lip, under proper conditions, there would be evidence of acid reaction from the mucous follicles. This seemed to be an additional fact of importance, and Dr. Brubaker, Professor of Physiology in Jefferson College and also in the Dental College, in Philadelphia, made some examinations, through dissections of the upper lip, very perfectly prepared. He demonstrated that the destruction on the labial surfaces of teeth was due, in part, to the action of acid through the mucous follicles of the mouth at night, when the lip was pressing on the labial surfaces of the anterior teeth, or when there was pressure on the buccal surfaces of the posterior teeth, and the destruction of the enamel evidently took place through the double action of local contact and fermentation. Dr. Kirk then demonstrated, somewhat in advance of the essayist, the presence of acid phosphate in the saliva and the changes that take place in the urine. Michaels, of Paris, Dr. Truman continued, gave the first solution of the problems in saliva in its diathetic aspects, and advanced statements that have been confirmed by others. Therefore, honor must be accorded Michaels as being the forerunner of all investigations of the mixed-oral fluids. Dr. Truman said that his own observations were crude, but as far as they went the tendency was to crystallize thought in that direction. In private conversation with Dr. Talbot, he (Truman) has been led to believe that Talbot does not believe in giving credit to the man who comes after the original investigator. Dr. Truman did not agree with that idea. Every man or every woman who has brought out anything that is new has had some one before him or her. Hertz, in a way, brought out wireless telegraphy, the practical work of the electrician developed into a Morse, and Franklin's kite advanced thought in the direction of electricity. Thus it is that ideas are carried from one mind to another, floating through the ether, dropping, as in the parable, on soil that is good and becoming fruitful, in the generations. Fitch originated steamboats on the Delaware River, but they failed of commercial value. Fulton followed him and succeeded. So, while we give full credit to Fitch, we do not forget the importance of Fulton's work. Therefore, Dr. Truman is one of those who ardently support not only the original men, but those who come after the original thinker and make the work practical. He does not know whether acid phosphate, as described by the essayist, produces erosion. He has yet to be satisfied on that subject, but thought that the probabilities are in its favor. Acids produce erosion, and erosion is the destruction or wasting of the teeth on the enamel surfaces, and abrasion is the destruction, through acid, and through the wear of the teeth, one on the other. Both these conditions are, therefore, the result of acid action. He trusts that the future will demonstrate absolutely that the acid phosphates of the saliva and the change in the urine are the producing causes, combined, as they necessarily must be, with local factors. In the variety of researches in this direction may we hope the truth will be demonstrated, but, as yet, much requires proof.

DR. TALBOT asked whether Dr. Kirk has done anything in investigation along the line of urinary acidity?

DR. TRUMAN said he had, but he could not say to what extent.

DR. G. V. I. BROWN, Milwaukee, said that as far back as he can remember, about twenty-five years or more, Dr. Talbot has been constructing first, if not a steamboat, at least something that is useful. During all those years he has been working on what he calls a working hypothesis. He is rounding out now a complete whole; his steamboat is very nearly finished, and Dr. Brown did not believe that it makes very much difference who casts the rudder or who makes the boiler for that steamboat; whether there was original work in the boiler, or original work in the rudder, or original work in any part of the boat. Surely, the man who did that original work is entitled to credit. But for this structure as a whole, that is where, in his opinion, the originality really lies: the construction, first, of a practical basis, on which all may ultimately stand and be carried forward through those difficulties that have to be met in the treatment of diseases of the mouth. Dr. Talbot, he continued, made no claim for originality, but gave credit for the originality of the idea to Dr. Truman, so that part of the steamboat is Dr. Truman's, and nobody else's. The whole question of erosion is one which is brought up by the fact that some kind of an acid is causing the erosion. That in those conditions of high degrees of acidity or alkalinity of the body there is a lessened resistance of the body, and the erosion occurs.

DR. FRANCIS A. FAUGHT, Philadelphia, thought that, with Dr. Truman in the beginning and Dr. Michaels and Dr. Kirk working along the same lines, it has taken Dr. Talbot to see the practical advantage of this work and to apply it. Dr. Talbot, he said, has developed the clinical side of the question, which, in the end, is the most important part of the work as applied to dentistry. In regard to the question of testing the saliva, Dr. Faught stated that litmus paper saturated with ammonia gas is sometimes entirely too alkaline for the small amount of acidity present, particularly in salivary secretions. He has been using neutral litmus paper, which reacts equally with acid or alkali. Also, the results of it can be more definitely brought out by first allowing the paper to be moistened in part by the saliva, allowing it to remain for a moment and then wetting the whole in distilled water. This throws out the question of change due to dry and wet paper and gives a definite end reaction.

Dr. Faught asked Dr. Talbot what experience he has had in the study of blood pressure in these conditions, because it has been recently brought out by medical men that all those conditions which have for their basis arterial capillary fibrosis, are conditions in which the blood pressure is abnormally high. Recently, one investigator, having gone over a great many of these conditions, concluded that any case in which the blood pressure is constantly two hundred millimeters or over, is either a case of chronic Bright's disease, or a case which will very speedily develop into it, unless something is done to relieve the blood pressure. He also asked whether Dr. Talbot has used the so-called blood pressure reducers, the nitrites, particularly of sodium, in the treatment of these cases previous to instituting the changes in diet and hygiene.

DR. V. A. LATHAM, Chicago, believes that Dr. Talbot was one of the very first to show the changes in the arteries. Dr. Latham was surprised that credit for acidity was not given to the late Dr. William Pepper. One of the first papers Dr. Latham read on coming to these shores was an article where Dr. Pepper announced and literally begged the American people to avoid acids on empty stomachs. He showed the pathological action, on the teeth and on the digestive system. He carried on experiments in Philadelphia, with Dr. Weir Mitchell and others, on lines of work showing and proving very conclusively

that the changes that take place in the gastric mucous membrane converted the gastric juice into an entirely new compound, and that seems to Dr. Latham to be the case.

DR. E. S. TALBOT, Chicago, confirmed Dr. Latham's statement that more than fifteen years ago he commenced on this branch of research work. He laid down foundation principles and has been working all these years. It is not an easy thing, he said, to write an original paper. The research work has to be done along with the clinical experience, in order to reach certain results; but he has for years adopted this plan. He hints four or five years ahead, in some paper, at work which he is doing. Thousands of men have investigated the urine and thousands are still at work on it, trying to prove certain things. If Dr. Kirk, he said, has done any research work along the lines of work that he has followed, he will give him credit. There are thousands and thousands of different methods of doing urinalysis, and if Dr. Kirk has done work along this line, and if he can show any clearer evidence than he (Talbot) has shown, he will be glad to do him justice. The one who has done the original work should get the credit. The mere fact that a man is doing urinalysis, does not indicate that he is doing work along the same lines as another. In regard to the remark made by Dr. Faught, Dr. Talbot said that he has done a large amount of work on blood pressure, and has published articles along that line, and has read papers before medical societies as well as dental societies, showing conclusively that where there is a high degree of urinary acidity there is a high blood pressure, and when there is a high blood pressure these changes are taking place in the alveolar processes and in the pulps of the teeth. If such conditions take place in alveolar process, which is an end organ, and in the pulp of the tooth, which is an end organ, why should not other end organs be involved at the same time and under the same conditions? That is to say, why is there not interstitial nephritis as well as interstitial gingivitis. Dr. Talbot believes that the research work which is being done now by certain men will show that this great pressure that is put on the kidneys is the forerunner not only of Bright's disease, but also of heart failure, and that it produces a decay of the arteries. Dr. Pepper, he said, no doubt did considerable work on the degree of acidity. The subject of acidity of the system has been known in the medical profession for a hundred years or more. Physicians have treated acidity in a blind way, without knowing when to commence the treatment, how much to give and when to stop. Dr. Talbot shows, in his paper, a definite, positive method of diagnosis, and when to commence treatment, how much to give, and when to stop, and that is applicable, he said, not only to erosion, abrasion and interstitial gingivitis, but also to every disease to which human flesh is heir.

Physicians at work on this line of research, are getting absolute results. There is no question about it. It is definitely settled that this method of treatment is absolute and to the point. In regard to erosion, abrasion and discoloration, Dr. Talbot said that for more than eight years he has been treating his patients along that line and is getting the results, and every dentist in the country can do the same thing. It is simple and easy. It only requires a minute to make the urinalysis, and it can be done in the office.

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**Curability of Diffuse Septic Meningitis of Otitic Origin.**—P. Laurens recently reported a case of otitic meningitis due to enterococci. The germs persisted in the cerebrospinal fluid after all the symptoms had subsided. The patient recovered after a spinal injection of a silver salt. In the discussion of the case at the Medical Society of the Hospitals, at Paris, Lermoyez urged routine bacteriologic examination of the cerebrospinal fluid in every case of suspicious acute meningitis. If polynuclears are found showing evidences of destructive action, the meningitis should be regarded as septic, and without loss of time a disinfectant should be injected into the arachnoid sac to sterilize the meninges before irremediable lesions have been induced. The meninges should also be drained by daily lumbar puncture. The subdural injection of the silver salt or other disinfectant acts on the meninges much more rapidly and intensely than in intravenous injection.

## SOME GENERAL REFLECTIONS ON THE PSYCHOLOGY OF DEMENTIA PRÆCOX.*

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In approaching a subject with so broad a title, it is desirable, at the outset, to outline the limitations of my remarks. I can do so best by setting forth what, for the purposes, is meant by dementia præcox, and secondly, what I mean by its psychology.

I hold no particular brief for the term dementia præcox. As outlined and elaborated by the masterly studies of Kraepelin and his followers, it represents, for me at best, a fairly reasonable entity, so far as psychic combinations, viewed in the light of comparative biologic interpretations, can be conceived of as entities.

Without attempting to elaborate, it is taken for granted that mental disorders, like those of any other organ or organs, represent an adjustment of functions to compensate for, or to correct a disturbance, which has its origin either outside of the organ or organs involved, or within them.

It is an elementary fact that the chief functions of the nervous system are to adjust the relations of the organs of the body, one to another; and to adjust the individual to his physical and social environment. An impairment of the former we speak of in general terms as a nervous disorder; a disturbance of the latter is regarded, in a general way, as a mental disorder. Any wide variation in adjustment of the individual to his social environment, which serves no permanently useful purpose, is evidence, therefore, of disturbance of mental functions.

The gamut of individual reaction,[1] however, is extremely wide, and when it is taken into consideration how little we really know of the sum total of psychical variation, it may readily be seen how difficult it becomes to determine whether a distinct adjustment to a situation is one that is suited to the occasion or not.

Our knowledge of the sound and healthy psyche is still in a very primitive stage; but it seems that, so far as we have gone along modern lines of normal and pathologic psychology, a certain advance has been made.

With this confession of faith in our uncertainties, I can only plunge directly into the subject matter of our topic, and outline very briefly what the particular grouping of adjustments is that, in our present state of knowledge, has led to the conception of the dementia præcox group.

The most striking of these features consist in the following:

1. The occurrence of the reaction, for the most part, in the years about puberty, adolescence and early manhood, i. e., within the years 18 to 28. This simply means that the majority of patients thus far studied, fall within this period of life. There are plenty beyond both extremes, but this is perfectly understandable when it is realized that the development of individuals varies very widely.

2. The gradual development of a psychasthenic state which deepens into the sense of incapacity and in-

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Tiling (Th.): Individuelle Geistesartung und Geistesstörung, 1904.

adequacy, and is but the beginning of a deteriorating process which shows itself in various attributes of the individual's mental powers.

3. Thus a gradual emotional deterioration becomes apparent. This may be an indifference, or emotional stupidity, or may be characterized, as Stransky has so well shown, as an incongruity between the content of ideas and their natural emotional sequences. This incongruity has been compared to an ataxia by Stransky himself, and there may be more complete dissociation between ideas and their usual emotional association. This emotional adjustment, concerning which we shall speak later, is one of the very marked features of the reaction of these patients.

4. Modifications in the so-called intellectual sphere are apparent. While it is recognized that sharp distinctions between intellectual and emotional disturbances can be drawn only with the greatest of reservations,[2] certain changes in the precocious dement are better grouped under this head than under others; thus, lucidity of consciousness, which is so often involved, at times leading to complete confusion; variation in the power of attention, a veritable attention disorder, both voluntary and involuntary; some modification of the faculty of orientation, often not marked; delusion development, often on an hallucinatory basis: the loss of apperceptive power and the development of the sense of unreality, of inadequacy, ideas of influence, of reference, and compulsory ideation. These are some of the more characteristic features in the intellectual sphere.

5. As a consequence of these and a number of other reactions, the details of which I can not here enter into, there results a fairly constant and perhaps distinctive alteration in the character of the individual. Jung,[3] in his most recent contribution to the subject of dementia præcox, thinks that we can speak of an "early dementia" character type, just as we can speak of an "hysterical" character. This is, I believe, to a certain extent true, and in a previous contribution on predementia præcox[4] I have tried to state the problem of such a type of individual which, under the combined stress of heredity and environment, is unable to adjust itself along self-conservation lines, and failing such adjustment goes under. As already held in my former paper, it seems premature to make a hard and fast statement of this nature, yet at the same time I am convinced that the structural defects, which later permit of the crumbling of the intellectual structure, show in many individuals before the breaking down has begun.

Among the more constant and firmly established of the abnormalities of character are affectations, or eccentricities of manner; a tendency to search out striking combinations, neologisms in speech, bizarreness in writing, in artistic production, and unapproachability. The final development of the childish, foolish manner, so frequently seen as an end product, is best considered here perhaps as well. These affectations are particularly common in individuals of lower social strata.

Of the tendency to coin new expressions in conversation and in writing, I shall say something when I discuss the origin of these conditions. The unapproachability of these patients may vary very widely. Whether its development is a result of the disorder of attention, or due to emotional modifications, or to both, and other factors, is far from being certain.

2. Bleuler: Affektivität. Suggestibilität und Paranoia. 1906.
3. Jung: Ueber die Psychologie der Dementia Præcox, 1907.
4. Am. Jour. Med. Sciences, August, 1907.

6. Finally, these patients show marked modifications in their motor conduct, i. e., in their general muscular reactions, both in the striped and unstriped muscles. Physical negativisms, stereotypies, affectations of posture and of bearing, catalepsies, automatisms, and a host of sympathetic phenomena are included.

These are, I take it, the more fundamental of the anomalies which make one arrive at the conception of dementia præcox.

On a basis of variation in onset, in development, in the grouping, in intensity, and in persistence of these reactions, clinical psychiatry has erected certain types. Thus, those in whom the elements of early onset, slow advancing dementia, emotional deterioration, and attention disorder enter more slowly and persistently into the picture we speak of as examples of simple dementia, heboids, or hebephrenia. With the introduction of more stormy intervals of great restlessness, much automatism, marked violence with stereotypies, verbigerations, negativism, etc., the group term catatonics is sanctioned; while in the paranoid group, which Kraepelin has so carefully erected are arranged those who deteriorate very slowly; whose character changes take place only after years; in whom the emotional indifference and attention disorder are very slight for years, but in whom the exaggerations and egocentric delusional interpretations eventually transform the character, and the exaggerations and eccentricities may take on a fantastic and almost artistic finish by reason of the very slow decay of the intellectual functions.

As to the psychology. By this I mean simply the interpretations. If these are the features of the group, can they be explained in terms with which normal psychology has made us familiar? It is by means of a positive affirmation of this query that the belief in Kraepelin's generalizations has received so wide and almost universal a recognition.

The term psychology is here used in its widest and most general of senses, as meaning the physiology of mental functionings. I can not understand why, for instance, a modern writer on psychiatry—Bruce—in an introduction to a recent text-book, should say that psychiatry will advance only when we get away from psychologic interpretations. Apart from psychologic interpretations, how can psychiatry advance at all? Certainly the psychiatry of Bruce shows retrogression by reason of this very attitude. Out of the factors of the psychology of everyday life must be built up a knowledge of the mechanism of abnormal mental operations. Without such can we ever hope to gain any true grasp of the very essentials of mental disorders?

So long as symptomatology alone is considered, we are in the position of the internist who sees, for instance, increased urinary secretion as a symptom of nephritis; without a knowledge of the essential factors—it may be increased cardiac tension—it may be alteration in osmotic tension by reason of variations in the inorganic salts—which lead to such urinary increase, a real understanding of the process is impossible and something purely subsidiary is considered as primary. So one might study the symptoms of negativism, but without some idea of the mechanism—such as has been tried by Bleuler—its true understanding, failing a psychologic analysis, is well-nigh impossible.

The problems of onset have only an indirect psychologic interpretation in that we view this period as one of loose aggregation of the psychologic elements.

In a highly suggestive and remarkably stimulating

chapter in his recent study of dementia præcox, Jung has drawn a striking parallelism between the psychical mechanism in hysteria and in dementia præcox. He shows, from the viewpoint of interpretation, that practically the entire range of the præcox symptomatology has its analogies in the hysteric syndrome.

I have elsewhere developed a like point of view and have chosen to regard the hysterical syndrome, as Freud and Janet have already done, in the light of a loose synthesis, while the dementia præcox reaction is, I believe, the result of a psychical disintegration or analysis. As one obtains identical views on the ascent and the descent of a mountain slope at any one point, so by analogy there may be a point in the synthesis of an individuality which, after later development into a personality, has its almost exact counterpart in the analysis of the same personality, if such analysis proceeds by a like path as the synthesis. This is a common biologic phenomenon. It is seen, for instance, in the stages of synthesis and analysis of all classes of food stuffs, carbohydrates, fats and proteids, and it is interesting further to note that even though a strict chemical formula of the synthetic and analytic substance may be identical, yet the *products* themselves are different. This is seen, for instance, in the synthetic and analytic alkaloidal muscarin; urea and carbamic acid, which, while having the same formula—one building up into a more complex formula, the other breaking down from the more highly developed end product—yet they have different properties, physical, chemical and pharmacologic. So although a parallelism exists in the mechanism of the development of hysteria and dementia præcox, yet the products are quite dissimilar.

The psychologic mechanisms which go to build up personalities are in reality fundamentally similar, notwithstanding their immense complexity and the wide variations in their end products. In some individuals the power of synthesis is uncertain and halting. These individuals are unable, if I may use a crude analogy, to tie their psychical components, or complexes, together into a well-knit individuality; the different constellations which go to make up the individual are, by reason of this loose synthesis, liable, for a number of years at least, to separate, dissociate, and thus is developed in part or in whole the hysteric and the true hysteria syndrome.

On the other hand, other individuals of a different genre do crystallize a personality; they do advance to a more or less perfect synthesis; but this, by reason of factors of which we are at present largely ignorant, commences to be broken down, and the analysis of the previously tied together complexes determines the dementia præcox syndrome. This is at least a point of view that has, it seems to me, excellent justification. Jung's masterly setting forth of the parallelism of hysteria and dementia præcox adds much confirmation to the availability of the analogy for interpretative purposes.

It is, further, highly doubtful if what has been here set forth as a second symptom, i. e., the development of a psychasthenic state, is capable of a single type of interpretation. It is the result of a compound of simples and is not, I believe, capable of analysis *per se*. Depending as it does on a number of other conditions which are contributory to it, these are better brought under review.

Is the emotional deterioration which is so characteristic capable of explanation? A number of students have attempted it. Freud, Kraepelin, Stransky, Bleuler, Neisser, Masselon and others. There is little doubt that the emotions, whatever they may be—and modern thought has demonstrated how difficult it is to formulate precise definitions for this class of phenomena—constitute the groundwork of personality. Modify the emotional life, and the entire social reaction is altered. Bleuler has emphasized the driving element in the "affectivity"[4] of the individual, and Freud has shown how important a place the emotional complex, hidden or superficial, may take in action. The faculty of attention is recognized to be closely allied to the emotional substratum and Bleuler has pointed out that attention is really nothing more than a special case of affect action.

What Bleuler has termed our "affectivity," by which, as I take it, he means the driving force within us, is the most important understructure of our entire personality. Thought and action are in reality purely the outcome or symptoms of this "affectivity."

When brought face to face with an unfamiliar or, in a sense, dangerous situation, our reaction, although accompanied by a swift play of ideas, is determined by the feeling tone that underlies these ideas, and, for the time being at least, a new series of ideas, saturated with and inextricably bound together by the feeling tone—forms the affective complex—which determines our reaction. This new complex retards all others, dominates the attention, and this determines the narrowing of consciousness. The muscle tension and the sympathetic control of our blood vessels is controlled by the new complex or, in the words of the James-Lang hypothesis, *is* the complex or *the emotion*.

If the situation is met with a feeling of adequacy, satisfaction arises, the complex disappears, the narrowing of attention passes, consciousness once more becomes more widespread, the muscular tension relaxes and the altered circulatory mechanism resumes its usual course.

If not met adequately, however, the complex persists. Every time, under such conditions, the situation arises the same complex takes control, until there becomes a condition of hypersensitivity to this complex which is brought forth by the situation, and finally not only may the exact situation call forth all of the discomfort of an inadequate reaction, but allied and associated situations become the starting points for the development of the affective control of the individual.

Are we justified in assuming that the attention disorder in many of our dementia præcox cases is due to a more or less prolonged condition of hypersensitiveness to certain emotional complexes, as Meyer has suggested, a veritable establishment of a habit, whereby consciousness is narrowed and the patient remains under the tension of his affective state?

Stransky has developed an interesting point of view in this same general line of interpretation. As already outlined in the beginning, we have assumed the association of ideas in meeting a situation with an affect aroused by the ideas. In most of us there is a more or less definite relation between the idea and the affect. The smell of dinner brings forth its adequate emotional tone. In more complex situations there is a like adequate relation between idea and emotion—between the noopsyche and the thymo-psyche, as Stransky coins the words. Gradually, however, there develops in the dementia præcox, as with the hysterical, a disorder between these relations, at first an ataxia—to use a neurologic analogy—then later perhaps a true paralysis between the idea and the affect—this is Stransky's ré-

sumé of the situation and perhaps offers a clue to the bizarre, irregular reactions of the precocious dements.

The analysis of suggestibility is far from being complete, yet in the recent work from the Zurich school, negativism may have light thrown on it when viewed in the light of an abnormal negative suggestibility.

Negative suggestibility is a physiologic prototype; by it is meant the correction process which arises at the same time that suggestibility is engendered. The impulse to do in response to suggestion has its physiologic corrective—as it were, not to do too much or too excessively. The tendency to react too actively to suggestion leads to evidence of reaction in a given direction, only to be distracted to similar overviolent reactions in another direction when another suggestion supervenes. The negative suggestibility enters as a corrective to excess reaction and thus tends to make performance effective and purpose advantageous. But an abnormal negative suggestibility overcorrects and leads to the phenomenon of negativism.

Although Bleuler's statement of the case can hardly be considered more than the saying of old facts in new language, yet his elucidation of the mechanism of negative suggestibility is illuminatory and progressive.

The time limit of our papers does not permit me to develop the idea further; there does remain, perhaps, a few moments in which to say something relative to the therapeutics of the subjects.

## THERAPEUTICS.

Many precocious dements, in fact, the most, are probably doomed from the very beginning. What with bad structure on which to build, bad environment and possibly a toxic factor (only postulated hypothetically), there is little opportunity for some precocious dements.

But a few are worth working for, particularly in the predementia stage. When the diagnosis is more or less patent the process has been too long in the making and the opportunities for repair have usually been neglected. The eccentric, ego-centric child is always a difficult problem, from the standpoint of training. Too many are permitted to go their own way in the hope that all will be well when they mature. A large number of precocious dements are drawn from this class.

I have tried in my paper already cited to indicate the lines along which these children should be trained, if possible. I believe, in the first place, in teaching them the petty conventions of life which make so frequently the oil that reduces social friction; the help in permitting an adjustment to unpleasant situations which thus diminishes the opportunities for affective action.

It is simple to say that a child should be trained to his *métier*, but extremely difficult to determine just what individual capacity is. In an interesting comparison made by Gaupp relative to the psychoses of urban and of rural communities, it appears that the stress of city existence bears particularly on the young mind and determines the hysterical and præcox reactions in the young more frequently, in the city, than in the country. This is a fact worth bearing seriously in mind if heredity and peculiarity are present in a child.

Schooling work does not seem to make a marked difference if it is pursued in moderation. The brighter, eager brains are more often damaged than those less pushing, and each individual child's reaction to its school work is worthy of close observation.

If the reaction to intellectual work is not normal—if fatigue enters as a large disturbing element—care should be exercised in so arranging studies to obviate it. These children need schools in which outdoor pursuits are cultivated and made co-ordinate with or supplemental to more intense intellectual efforts.

There are a large number of ideas of primary importance in the care of this particular type of breakdown. Many are not hopeless by any means; they need the proper type of education, and scientific pedagogy looks to the physician to indicate the lines of development for this class of true mental healers.

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## DISCUSSION

DR. WM. A. WHITE, Washington, D. C., said that not many years ago all mental cases were placed in large groups, called excitements, depressions and dementias. Later it was found necessary to differentiate still further, and many were going to the opposite extreme. Now we must study the psychologic states in individuals; we must study their course from beginning to end, explaining them on the basis of a biologic reaction of the individual to his environment. When we begin to do that, we find all sorts of symptoms, and when we begin to outline and define these different reaction types or psychoses, as they are called, we find the same sorts of reactions in many forms; for instance, hysterical attacks may occur in different groups. If we are going to define them more accurately, we must study the symptoms from a psychological standpoint, so that we may understand each one. That has been done by Janet by picking out definite so-called functional symptoms, and grouping them from a psychologic standpoint, one result of which has been a new psychoneurosis—psychasthenia. Dr. White believes further very careful study of all mental disorders must be made primarily along psychologic lines. The anatomic lesions of Broca's convolution have absolutely no meaning; they are nothing more than anatomical curiosities, unless the case was studied psychologically before it went to the autopsy table, and unless we know accurately just what the mental condition was during life. We must study the individual symptoms, and understand just what they mean in each separate reaction type. Then we must study the character of the individual, as Dr. Jelliffe mentioned, and in connection with the disorder under consideration endeavor to outline the character of the predementia type.

DR. L. H. METTLER, Chicago, declared that those who neglect normal psychology in the interpretation of mental diseases are in the position which medicine occupied before the days of Virchow, when diseases were nothing but groups of symptoms, mere unexplained manifestations. Of what use, he asked, is the clinical picture of any disease, except as a guide-post to the underlying physiopathology? It is all very well to talk about the termination of dementia, the beginning and the end of ataxias, etc., but what we want to know is, why these things are so? Why they occur thus? The only way to advance in abnormal psychology is to cling closely to the data afforded by normal psychology And yet, Dr. Mettler has heard confrères say that there is nothing in normal psychology. Such an attitude of mind he regards as unscientific. Psychology has made tremendous strides lately, especially modern physiologic psychology. The psychic states under discussion represent the reaction of the individual, using all parts of his body. His physical organism is being influenced by his heredity and environment. In the study of psychic diseases, we study the reaction of the individual to his heredity and environment. One must consider always what a normal indvidual would do under the same circumstances. This brings us again to normal psychology. The variations from the normal represent his psychiatric trouble.

DR. SMITH ELY JELLIFFE, New York City, said that there is a small percentage of individuals with dementia præcox who by a more healthy and better adapted mental training might have escaped the penalty either of their inheritance or environment. Such pedagogy, true mental science teaching, to be efficient, must begin in the predementia stage, although even some later cases are not hopeless.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, JANUARY 18, 1908.

## LACTIC ACID AS A CAUSE OF DISEASE.

On account of the valuable observations on the occurrence of acid intoxication in diabetes, and the frequency of the presence of acetone and related bodies in the urine in various conditions of intoxication, the terms "acidosis" and "acetonuria" have become of common usage in medical practice. In many instances, however, the usage of these terms that we hear indicates the existence of a general misunderstanding of the significance of acetone and the organic acids as factors in disease production. Acetone is found in the urine of a sick child, or the acetone odor is noticed in the breath of a patient with some obscure intoxication, whereupon it is at once stated that the patient is suffering from "acidosis" or "acetonemia," and that the observed symptoms are due to intoxication with acetone bodies. Such statements are incorrect to the extent that they imply the production of symptoms or pathologic conditions in these cases through poisoning with acetone or organic acids, for the acidosis or acetonuria is generally but the result of a morbid condition and seldom the cause. We have actually but one good example of a disease condition that is certainly caused by poisoning with the so-called acetone bodies, and that is diabetic coma; and even in this instance it is probable that acidosis is by no means the sole causative factor, or the coma would be much more uniformly and constantly relieved than is the case, by administration of alkalies. It seems still to be necessary to emphasize the fact that the diacetic acid and the β-oxybutyric acid that accumulate in the blood and urine in this disease are only toxic because they are acids, and that their injurious effects are probably solely the result of their withdrawal of the inorganic bases from the blood; they have almost no toxicity other than this, and their neutral salts are practically harmless. Acetone itself is but very slightly toxic, resembling ethyl alcohol in its effects, and the lethal dose for man has been estimated at 500 grams, while seldom more than a few grams are found in the urine in the most profound cases of acidosis or acetonuria. The symptoms that are present in patients with acetonuria and similar conditions are, therefore, not usually due to the acetone bodies themselves, and the presence of these substances in the urine must be looked on merely as one of the manifestations of the disease condition that is producing the other symptoms of intoxication.

There have been a number of articles in the literature of the past few years on paralactic acid as a cause of disease, especially the toxemias of pregnancy. These originated with the studies of Zweifel, who found paralactic acid in the urine of eclamptic women, and also in their systemic and placental blood, and in the blood of their fetuses at birth. He therefore concluded that the acidosis, which can nearly always be found in eclampsia, as shown by the large proportion of ammonia nitrogen in the urine, is the cause of this disease, and that paralactic acid is particularly responsible for the intoxication. Lockmann corroborated these statements, and also found paralactic acid in the cerebrospinal fluid, and several other workers have obtained similar results. In none of these observations, however, were more than minute quantities of paralactic acid isolated; but in a case of pernicious vomiting of pregnancy, the relation of which to acidosis has been particularly pointed out by Williams,[1] Underhill[2] succeeded in isolating about one gram of the zinc salt from the twenty-four hours' urine. On account of the observations and claims of Zweifel there has developed a tendency to attribute many and sundry sorts of convulsive conditions other than eclampsia to intoxication with paralactic acid, without first having demonstrated that paralactic acid is capable of causing any such symptoms.

Paralactic acid, or, as it is more commonly called in this country, sarcolactic acid, is produced under normal conditions and in no inconsiderable amounts in the muscles during muscular activity, and possibly in smaller amounts in other cells and tissues. It differs from the ordinary lactic acid that is produced in fermentation simply in that it is dextrorotary, while ordinary fermentation lactic acid is optically inactive, being a mixture of levorotary and dextrorotary lactic acids. Under normal conditions, the paralactic acid is completely oxidized, and this process seems to occur chiefly in the liver; consequently, it may fail to be entirely oxidized and appear in the urine either when produced in excessive amounts by violent muscular activity, or when on account of degenerative changes in the liver it can not be destroyed as rapidly as it normally is. Puerperal eclampsia, with its combination of violent muscular spasms and extensive necrotic changes in the liver, therefore, offers ideal conditions for the excretion of lactic acid in the urine and other excretions and secretions, and it is not strange that it has been found in this condition; but it does not follow that we should ascribe the eclampsia or any of its symptoms to lactic acid intoxication.

As a matter of fact, the studies of Donath[3] show conclusively that even large amounts of the sodium salt of lactic acid are practically without any effect what-

1. Bull. Johns Hopkins Hosp., 1906, vol. xvii, p. 71.
2. Jour. Biol. Chem., vol. ii, 1907, p. 485.
3. Deut. Zeitschr. f. Nervenheilk, No. 32, 1907, p. 232.

ever, intravenous injections of as much as 1 to 1.5 gram per kilo into animals having caused no serious symptoms. We must, therefore, consider that lactic acid is not of itself a cause of symptoms or of disease, except in so far as it may act like other acids by withdrawing bases from the blood; and even this effect is not likely to be considerable, in view of the very small quantities in which this acid is excreted as compared with the large quantities of oxybutyric and diacetic acid that are often found in the urine in various forms of acidosis.

## SERUM TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS.

During the last two years efforts have been made to produce effective serums for the treatment of patients suffering from epidemic meningitis, notably by Wassermann, Jochmann,[1] and most recently Flexner and Jobling.[2] While the number of patients treated with serum is still small yet the results on the whole indicate that it may be possible to produce serum that may have more or less beneficial influence on the course of the disease. Of the forty-seven patients with meningitis treated in various places with the serum prepared by Flexner and Jobling thirty-four recovered and thirteen died. Eliminating four cases, in which the disease was either fulminant or the patient's condition so extreme that death occurred in a few hours after the injection of the serum, the death rate becomes 20.1 per cent. This is considerally smaller than the death rate among the untreated cases occurring at the time. In a number of cases the disease with acute and violent onset terminated so abruptly within forty-eight hours of the injection of the serum that the observers could not but be impressed in favor of the serum. Most of the patients who recovered did so completely and without permanent defect, except some deafness in one case.

Többen[3] reports a mortality of only 16.6 per cent, in twelve cases in which the serum treatment was begun on the first or second day; his total death rate in twenty-nine serum treated patients, being 34.5 per cent., while in thirty-seven patients treated by lumbar puncture only it was 56.7 per cent.

Like Schöne,[4] Flexner and Jobling used the intradural method of injection and for two principal reasons, namely, in order to bring the serum into direct contact with the active focus of infection and also because substances are known to pass but slowly and imperfectly from the blood stream into the cerebrospinal fluid. Enough observations are not yet at hand to demonstrate finally which method of injection, the intradural or subcutaneous, is really preferable. The introduction of the serum into the spinal canal seemed in cases which could be followed closely to cause rapid disintegration and arrest of multiplication of the meningococci. There seemed also to be an increased phagocytosis with intracellular destruction. At the same time it is probable that potent serum has some antitoxic action on the meningococcal endotoxins. Without going into further details at this time we think it safe to say that, judging from the experience already obtained, both in this country and in Germany, the data at hand appear fully to warrant a wider trial of reliable serum in suitable cases under proper clinical and bacteriologic control. Of course it would be interesting to know the effect that normal serum may have on meningitis, but so long as immune serum is available, experiments with normal serum would hardly be warranted.

A word or two may be added in regard to the production of the immune serum and the manner of injection as practiced by Flexner and Jobling. Horses are first inoculated subcutaneously with a small quantity of mixtures of cultures of different strains of meningococcus heated to 60 C. for thirty minutes, and subsequently the dose is doubled at each injection, and at present living organisms and autolysates are injected alternately at seven-day intervals. Intravenous injections have been abandoned because of the serious symptoms that they cause. The serum used in the cases discussed at this time was derived from a horse which had been in process of immunization over one year before using the serum; 3 c.c. of the serum are introduced at a single injection after withdrawing from the spinal canal about as much fluid as the amount of serum to be injected. The injection is done slowly and carefully and it is advised that it be repeated every twenty-four hours for three or four days. It goes without saying that the earlier in the attack serum can be given the better the outlook.

1. Deut. med. Wochschr., 1906, xxxii, pp. 16 and 20.
2. Jour. Exper. Med., 1908, x. p. 141.
3. Münch. med. Wochschr., 1907, xlix, p. 2420.
4. Theraple der Gegenwart, 1907, xlviii, p. 52.

## A SANITARY ARMY.

Unlimited prodigality of effort and exertion in the acquisition and safeguarding of wealth, of whatever sort, with an almost equally complete lack of energy in the safeguarding of health, seem to be fundamental characteristics of the human race, whether living in aboriginal simplicity or in the decadence of overcivilization.

One need not necessarily confine his observations on this theme to the United States, for the condition is practically universal; only here and there are there communities in which has grown up an appreciation of the value of full and proper sanitary protection, and in which an effort commensurate with the importance of the work is really exerted. These communities, however, are so rare as to excite our wonder no less than our admiration. In the United States, however, taken either as a whole or in part, we find no such condition of vigilant and appreciative sanitary protection as is needed; nowhere proper sanitary laws and with active and intelligent cooperation in their enforcement, and

nowhere a cheerful spending of money necessarily required for such protection. Yellow fever in New Orleans, plague in San Francisco, or cholera in New York, are not merely things of local, provincial interest; they are facts of national importance—and of national disregard until within the last very few years. In the Public Health and Marine-Hospital Service we have a handful of competent men, under-officered and underpaid, who are left to struggle as bravely as they may, and too often in the face of active opposition, with the sanitation of the extreme parts of the country. And even these may at any time see their work, which perchance they know to be vitally necessary for the protection of the country against some epidemic disease, frustrated through the lack of support and the withholding of essentially needed funds by the layman who holds the pitifully small purse which our government has assigned for the protection of the health of its people.

We spend millions of dollars a year for the sustenance and increase of a navy for the maintenance of peace and guarding our commercial rights and operations. We spend other millions in finding out what is the matter with the cotton plant in Texas, or the peach trees in New Jersey, or the orange trees in California—and practically nothing in protecting the health of our citizens. With a sufficiently large and well-drilled sanitary corps—a sanitary army into which, if you please, we should change our Public Health and Marine-Hospital Service—placed on the same basis of rank and pay as the regular army that we maintain, mostly for the edification of our various aborigines, who can estimate the vast saving, not alone in life and health, but in actual dollars, that would be effected? Consider the possibilities: Suppose that there is smallpox in Tennessee. This is not a matter which concerns that state alone, for we know how the disease travels. With a sanitary army, however, there need be no alarm. At an hour's notice thoroughly trained men, directed by those who know full well every rule of the fight, are sent into Tennessee, and before the disease has spread it is all over and that section has been made clean. Where would be the epidemics of typhoid fever, each taking toll of its quota of human lives—and dollars—every year, with such a sanitary army watching and guarding our sources of water supply? Consider the history of plague in California. With such a sanitary army always on a war footing, the foolish denials of a crooked mayor, or an angry governor, or a venal state board of health, would not be permitted to menace the health of the whole country. A flying wing of veteran fighters would at once close every avenue of rat migration, enforce those measures which alone can spell protection, and save hundred of lives and millions of dollars.

Is it too much to hope that some day we shall have as much regard for our wealth in lives as we have for our wealth in dollars and industries? Or will the primal instinct of disregard for health be always too strong?

## DEVELOPMENTS IN MEDICAL DEONTOLOGY.

That good old word economics has been mainly absorbed by those who discuss phases of material and pecuniary interest to people. It must not be forgotten, however, that, according to its original derivation from two Greek words meaning house and law, its real significance is the setting of one's house in order. In recent years there has been a noteworthy series of movements for the setting of the medical professional house in order, and this has included the putting to rights of the relations of the physician to other professions. We have suggested at various times the advisability of meetings of physicians to which at one time druggists shall be invited, at another lawyers, at a third teachers and clergymen, and we have been glad to chronicle the holding of such meetings in various parts of the country.

An interesting development of medical economics in the line of applied ethics as it concerns medical matters was exemplified in a course of lectures held in Brooklyn during October and November. The general subject of the course, which was attended by an audience composed of clergymen and physicians numbering at times over 100, consisted of embryologic questions. Many phases of the ethical problems that have to be discussed in embryology and obstetrics are of interest to clergymen as well as to physicians. The whole subject of abortion is a social as well as a medical problem. All law proclaims the life of even the youngest child as inviolable. The sale of remedies supposed to produce abortion, and the existence of various institutions in which the procuring of abortion is more or less openly advertised, represent social problems that even the combined influence of clergymen and physicians will find a difficult task to solve. Outside of the medical profession there is a general impression that "abortifacient" drugs are effective. The announcements in the newspapers lend color to this false impression. The definite knowledge, then, that there are practically no remedies which produce such an effect unless at the same time the mother's life is exposed to serious danger, is practical information tion that should be widely diffused.

Many of the problems of heredity as concerned with embryology are of interest to clergymen and to educators and other moulders of public opinion as well as to physicians. In spite of the general impression to the contrary, diseases in the proper sense of that word are not inherited, though defects and deformities are the subject of inheritance. Tuberculosis is not directly inherited, the inheritance of direct predisposition to it even is dubious, and other diseases are almost without evidence as to heredity. The communication of disease from the mother to the child in her uterus is not uncommon and so congenital diseases are not infrequent, but they are no more hereditary than are diseases communicated by the mother through her milk. With regard to some diseases the thought of heredity and hereditary influences is extremely discouraging and makes

an unfortunate and unfavorable factor as regards recovery, so that the spread of knowledge on this subject is likely to be of the greatest possible good. No better auxiliary for the diffusion of such knowledge is at hand than intelligent clergymen.

The subject of social diseases, or, as they are more frankly called, venereal diseases, has now reached a position and importance in public interest where definite knowledge with regard to them needs to be in the minds of the clergy and educated people generally. Clergymen can be potent factors in educating the rest of the community to a proper realization of the social significance of these diseases, and information imparted to them is likely to be widely diffused. When they receive this knowledge under such circumstances that they are convinced, as is the case when physicians are present, that there is no exaggeration with regard to it, they are likely to be much more impressed than would otherwise be the case.

Finally, there is the question of the general attitude of clergymen and physicians toward each other and of the possibility of such coordination of effort on the part of the cognate professions as shall make for the common weal. The subject, for instance, of "patent medicines" and the ethical position of those who exploit them is one of the most serious of these questions. In the past, unfortunately, only too often, the interest of the clergymen has been exerted on the wrong side. The frank discussion of these subjects with the answering of questions after each lecture, and the expression of opinion and interchange of sentiments in groups afterward, clear the air of many doubts and difficulties and make it clear that the medical and clerical professions, both intent on making men happier so far as possible, have interests in common even in departments of knowledge sometimes unsuspected, but with regard to which their cooperation for the public good will doubtless prove of great humanitarian benefit.

## JAPANNED ENGLISH.

In an entertaining article on "Japanned English"[1] Mr. George Kennan discusses the ludicrous mistakes which the Japanese make when they essay to advertise their wares and show their erudition by a smattering of English. The medical reader finds much to interest him. For example, "Fullish Milk," "Fluish Milk" and "Fulish Buttr" represent the endeavors to spell phonetically the word "fresh" as it sounds to the Oriental ear, the letter "r" giving the Japanese a lot of trouble. All sorts of drinks are described in Japanned English as "nourishing." For instance, over a shop in Tokio a sign board bore the words "Nourishing Drugs." Mr. Kennan says that he did not ascertain whether the proprietor sold cocktails or cod liver oil. In a daily newspaper a dealer in coffee declared, "More men is not got dropsy of the legs who use this coffee, which is contain nourish." One can not deny that some definite idea is conveyed, at any rate. A Tokio druggist advertised for months "Invaluable, Fragrant and Nice Pills." The qualities are all desirable, we admit, but the druggist did not inform the public for what the pills were to be used. In this country it is the custom for manufacturers superabundantly to inform the public and physicians what certain pills will "cure." The advertisers of our sanitariums and health resorts might receive suggestions from the artistic writer of a pamphlet, "A Guide on Hakone," prepared for the use of visitors to this beautiful summer resort on the eastern coast of Japan. "Wind proper in quantity, suits to our boat to slip by sail and moonlight shining on the sky shivers quartzy lustre over ripples of the lake. The cuckoo singing near by our hotel, plays on a harp, and the gulls flying about to and fro seek their food in the waves. All these panorama may be gathered only in this place. Forty-five houses among whole machie are the hotels for the cessations of travellers. Breads, fleshes of fowls and animals satisfy the relish of people. The milk is distributed to the hopers by the branch store in Hakone. Streams of water issuing forth in the southeastern valley of Hakone machi are used by whole people. Transparent and delicate liquid is constantly overflowing from the vat and its purity free from deflement so values on the applause of visitors as it is with the air." "Who," Mr. Kennan asks, "after reading this description, would lose a moment in packing his trunk and starting for Hakone? The moonlight shining with quartzy lustre on the gulls, and the cuckoo playing a harp, would alone pay for the journey." Mr. Kennan calls attention to the fact that however ludicrous may be the mistaken use of words, Japanned English is almost invariably intelligible. For instance, "This hot spring is beautiful perspective and a delightful freshness in the air. It is raise up 4,640 foot up the sea surface and the temperature within 75 degrees. Therefore it is most able to everybody sheltering the hot in the summer season. This hot spring is not special virtue that will give the pure and healthy to human heart. Because it is the carbonic acid spring to comprehend many iron. There build the several bathroom to reserve for some person. Half and 6 miles for Tanaka Station at Shinetsu Line." In many parts of Japan, says Mr. Kennan, men and women have been accustomed to bathe together in the same hot spring. When the Japanese found this practice shocked foreigners, the proprietor of a hotel, in advertising a certain bath resort, said: "We have complete separation for ladies and gentlemen so that the disorder is improbable." Mr. Kennan calls attention to the admirable precaution and prudence shown in the word "improbable."

1. The Outlook, New York, Dec. 14, 1907.

## THE USE OF SERUM IN HEMORRHAGIC DYSCRASIAS.

A few years ago P. Emil Weil, of Paris, carried on some interesting experiments on patients suffering from hemophilia, in whom he was able to control the tendency to bleed for a certain time with injections of fresh serum. Since then he has experimented further with other conditions in which there is a tendency to hemorrhage, with an increased coagulation time. Weil

now[1] recounts his experience with this procedure in cases of spontaneous and inherited hemophilia, of acute primary and secondary purpura, exhibiting hematuria, epistaxis, hemarthrosis, or other hemorrhagic accidents, of chronic purpuric conditions, and of severe anemias, with tendency to hemorrhage. In nearly every instance he was able to control the hemorrhage, and, although not much can be hoped for it as a curative measure in chronic dyscrasias, it appears to be a valuable aid in certain conditions. Weil states that the "sera of man, the rabbit, horse and cattle have been found equally efficacious, although *in vitro* the action of human serum is more evident in correcting the disorder." He injects 15 c.c. of the serum into a vein or 30 c.c. beneath the skin, and has found the ordinary antidiphtheria serum to be of value, particularly when it is less than two weeks old. Weil does not state in what way the serum is supposed to act. It can hardly be due to the calcium which it contains, as 30 c.c. of serum would contain only about 0.0034 gm. of calcium salts. The hemolytic property of a foreign serum might be supposed to give rise to the freeing of more nucleoproteid and thus increase the fibrin ferment, but in pernicious anemia, in which serum has been shown to have a certain degree of antihemorrhagic power, there is already an aggravated hemolysis. It seems incredible that the human subject could make use of the fibrinogen, as such, of another species, even though enough were added in the 15 c.c. to make up a deficiency, and that for several weeks this foreign fibrinogen should remain in the circulation and play understudy to the ailing human fibrinogen. Whatever the theory, it seems to have been shown that the injection of fresh serum is of service in hemorrhagic conditions exhibiting an increased coagulation time.

## FLIES AND INTESTINAL DISEASE.

A subject of cumulative importance in sanitation is the pollution of the great watercourses by the discharge into them of sewage and the noxious products of industries. A Committee on Pollution, of the Merchants' Association of New York, has taken up the matter with regard to that city, and in its recently issued report[2] details some investigations that are of general interest. The relation between flies and the dissemination of intestinal disease was conclusively demonstrated by the following facts: First, though running water tends to purify itself in a very short distance, nevertheless accumulations of excreta of large extent were constantly found under piers, in slips, backwaters and wherever impediments to the free flow of the tide caused the formation of eddies. It was further found that flies were more abundant where accumulations of floating excreta were greatest, especially at the sewer outlets, and that intestinal diseases which have been endemic for some years were most thickly distributed within a short radius from the rivers along their banks, the interior of Manhattan Island being comparatively free, and that in the vicinity of the sewer outlets such diseases were especially focussed. Flies captured by traps from the excretal accumulation areas were examined bacteriologically, and were found to be swarming with fecal micro-organisms, one fly carrying over 100,000 in its mouth and on its legs. These flies enter houses and crawl over the food, as well as over food supplies exposed for sale, and over the mouth, nose and eyes of infants in their parents' arms on ferry boats or on the piers. A further research, illustrated by a chart, shows in a remarkable manner the parallel between the temperature course, the prevalence of flies, the deaths due to diarrheal diseases and those due to typhoid, thus definitely connecting, in fact, the range of possibilities suggested by the previous findings. A picture showing the colonies of bacteria left by a fly crawling over a gelatin plate affords a striking object lesson to those unacquainted with bacteriology, who may find it difficult to realize the harm that can be effected by a single fly. The work of the committee is worthy of all praise.

1. International Clinics, seventeenth series, vol. iv.
2. "Pollution of New York Harbor as a Menace to Health by the Dissemination of Intestinal Diseases Through the Agency of the Common House Fly." Report by Daniel Jackson, S.B., to the Committee on Pollution of the Merchants' Association of New York, December, 1907. (In the list of members of the committee we note the name of Dr. Albert Vander Veer.)

## SMALLPOX QUARANTINES REMOVED.

In the *Journal of the Minnesota State Medical Association*, January 1, appears an editorial announcing that the Minnesota State Board of Health has withdrawn quarantine from smallpox cases throughout the state, thus throwing on the county boards of health the responsibility of protecting the public from this disease. The editorial says: "The State Board of Health will not object to any township or county providing protection to its inhabitants under the direction of the local boards of health, but it will not enforce quarantine for smallpox because it has been found inefficient, unscientific and unreliable. Other states have tried the experiment and have succeeded in keeping smallpox out of their borders. The antivaccinationists will probably roar with rage at the new order because they believe that under former methods they were protected. Now they may become victims, while the man who is vaccinated will be more surely protected." As the editorial says, it will take time to prove or to disprove the wisdom of this action of the board. Quarantine methods are expensive and cumbersome and are often opposed by local public sentiment. It has been positively proved by the experience of a century that proper vaccination is an absolute preventive of smallpox and that when the entire community is thoroughly vaccinated smallpox need not be feared. It would seem, therefore, that the state had done its full duty when it has provided an opportunity for proper scientific vaccination for each individual, and that if any one refuses to accept this protection he can not in justice expect the state, the county or the city to go to any further expense to protect him from the disease. The result of the abolition of quarantine methods will be that when smallpox appears in any community the vaccinated individual will be safer, while the unvaccinated individual will be liable to contract the disease. Such a demonstration of the efficacy of vaccination may cost the community dear, but it will be convincing and salutary.

### THE ARMY MEDICAL REORGANIZATION BILL.

The Army Medical Reorganization Bill (H. R. 186) was reported favorably by the committee on Military Affairs of the House January 7, and by the same committee of the Senate January 8. Favorable action by the committees so early in the session is regarded as a good omen and the supporters of the bill have reason to feel encouraged. This question has been considered for so long a time and reported on favorably so often that any protracted discussion on it in either house would seem to be unnecessary. The fact that, under present conditions, two-fifths of the officers of the medical corps of the United States army serve only a single year ought to be in itself sufficient argument to secure the adoption of this measure. The sooner it becomes a law the sooner can the medical service of the United States Army be put on the proper basis. That the bill will pass the Senate there is little doubt. That it will pass the House, if its friends are allowed to bring it up, seems equally certain. It is again up to Speaker Cannon to allow the bill to come up for action in the House. It is to be hoped that all personal motives and prejudices will be submerged in a desire to secure an efficient and adequate body of medical officers for the United States Army.

### THE PROPOSED NEW YORK VIVISECTION BILL.

We have received a copy of the bill prepared to be introduced into the New York Legislature for the regulation of vivisection. An examination of this bill indicates that an attempt is being honestly made to satisfy the legitimate requirements of scientific investigation and instruction, and at the same time to prevent the infliction of unnecessary pain on animals. We would suggest that before endorsing this bill, physicians should examine it very carefully, as there are some features of it that look vicious. While we doubt if any such legislation is required, since the infliction of pain on animals during experimentation is not as common as some are led to believe, still if such legislation is enacted, it should be done with care, so that legitimate investigation in behalf of suffering humanity may not be interfered with.

## *Medical News*

### ALABAMA.

**Found Guilty.**—Dr. Charles E. Thomas, a colored physician at Anniston, is said to have been found guilty of criminal malpractice and sentenced to three years' imprisonment, and in addition to have been fined $175.

**Personal.**—Dr. J. W. Cox has been elected physician of Etowah County, vice Dr. Arthur W. Ralls, resigned.——Dr. Thomas E. Dryer, Huntsville, has been elected jail physician.——Dr. Milton C. Ragsdale, McCalla, is reported to be recovering from his recent attack of cerebral hemorrhage.

### ILLINOIS.

**Personal.**—Dr. George A. Zeller, South Bartonville, who has been ill, is reported to be convalescent.——Dr. Emil Lofgren, Rockford, tripped over a wire, December 25, breaking his left collar bone.

**Would Sell Cocain by the Ounce.**—The state board of pharmacy, on December 10, framed a new move in the crusade against the sale of cocain by sending letters to every wholesale drug house in Chicago requesting that the sale of cocain to druggists be limited to one ounce.

**Superintendent Exonerated.**—Dr. Harry G. Hardt, superintendent of Illinois Asylum for Feeble-minded Children, Lincoln, as a result of a joint investigation conducted at the institution, January 6, regarding the injury to an inmate, Frank Giroux, was acquitted from all blame.

**Library for County Society.**—Morgan County boasts of having one of the best selected medical libraries in Illinois. A room has been assigned for the use of the society at the public library. The medical books and journals have been completely indexed and a salaried attendant is employed. The leading medical journals are taken and the articles therein classified. During the last year 170 volumes, 103 pamphlets and 40 bound periodicals have been donated to the library.

**Communicable Diseases.**—Chenoa reports 6 cases of scarlet fever.——Recent reports of smallpox are as follows: Highwood, 2 cases; 17 cases are reported from Kilbourne, and 5 cases from Pleasant Plains, 15 miles west of Springfield, where quarantine has been established.——A case of smallpox is reported in La Salle County jail, Ottawa.——Two houses in Osceola are under quarantine on account of smallpox; 35 cases are reported from Virden; at Bloomington 4 cases are reported.

**Occupational Diseases.**—The governor has appointed the following members of the committee authorized by the General Assembly to investigate occupational diseases in the state and report to the next General Assembly: Dr. Ludvig Hektoen, Chicago, secretary of the Memorial Institute for Infectious Diseases; Dr. Alice M. Hamilton, Hull House, Chicago; Dr. George W. Webster, Chicago, president of the state board of health, and Dr. James A. Egan, Springfield, secretary of the state board of health.

**State Board of Health Meeting.**—At the thirty-first annual meeting of the state board of health, held in Springfield January 7, special attention was devoted to the alarming spread of smallpox throughout the state. The board directed that 100,000 copies of the circular on "Consumption" be distributed through the physicians of the state, and voted to establish 200 stations throughout the state where containers for the transmission of sputum might be obtained by physicians. In its annual report the board will again recommend the establishment of a state hospital for the treatment of tuberculosis. The election of officers resulted as follows: Dr. George W. Webster, Chicago, president, and Dr. James A. Egan, Springfield, secretary-treasurer (re-elected for the twelfth time).

### Chicago.

**New University.**—St. Vincent's College has been granted a charter as De Paul University, and the plans for its future embrace the establishment of a school of medicine and a school of law.

**Isolation Hospital.**—The city is about to begin to build an isolation hospital at Thirty-fourth street and Hamlin avenue. The building is to be two stories in height, 50 by 168 feet, to be heated by steam, lighted by electricity, and to cost about $50,000.

**Vaccination Rule Upheld.**—The vaccination rule of the board of education was upheld in the Circuit Court, December 23, in the mandamus suit instituted by Mr. B. F. Jenkins to compel the city to allow his daughter to attend the John Fiske Public School, although she had not been vaccinated.

**Personal.**—Dr. A. I. Bouffleur has been elected a member of the consulting staff of Cook County Hospital, to fill the place left vacant by the death of Dr. Nicholas Senn.——Dr. Lucy Waite was the guest of honor at a banquet given by the professional women of Denver January 1.——Dr. George W. Webster has been appointed a delegate to represent the State of Illinois at the American Medical Association session.

### INDIANA.

**Protective Association Formed.**—The Physicians' Protective Association, with a capital stock of $200,000, has been incorporated in Fort Wayne. B. H. Sommers, formerly of the Physicians' Defense Company, is to be general manager.

**Society Meetings.**—At the annual meeting of the Indianapolis County Medical Society, held January 7, the following officers were elected: President, Dr. Frank B. Wynn; vice-president, Dr. Thomas W. De Hass; secretary, Dr. Roscoe H. Ritter, and councilors, Drs. Samuel E. Earp and Harry E. Gabe.

**Personal.**—Dr. George J. Studer, Fort Wayne, has been appointed examining surgeon of the police department.——Dr. William H. Burroughs, Shannondale, who has been seriously ill, is reported to be convalescent.——Dr. William S. Campbell, Lafayette, who is now in California, has been reappointed health officer of Tippecanoe County.——Dr. Union H. Holder,

Washington, is suffering from a serious affection of the optic nerve following influenza.

**Communicable Diseases.**—Churches and schools of Wakarusa have been ordered closed for two weeks on account of smallpox.——At Franklin 4 cases of smallpox have been discovered. ——Fort Wayne reports 2 cases of smallpox imported from the country.——Albion and Wolf Lake have both been placed under quarantine on account of diphtheria.——An epidemic of diphtheria is reported from Elnora.——Fountain City reports 5 cases of scarlet fever, which has caused the temporary closure of the public schools.——Measles is reported to be epidemic in Shannondale.

## IOWA.

**Hospital News.**—The State Hospital for Tuberculosis, near Iowa City, will, it is expected, be ready for occupancy this month.

**School Inspection.**—The physicians of Des Moines will act as health inspectors of public schools and public school children beginning with this month. The arrangements are under the charge of the Polk County Medical Society.

**Communicable Diseases.**—An epidemic of diphtheria is threatened in Sioux City.——Mason City reports an epidemic of influenza.——The schools of Beaver have been closed on account of smallpox.——There are several cases of smallpox reported from Avoca.——Iowa City reports 7 cases of smallpox, 6 of which are located on the West Side.——Several cases of smallpox are reported from Traer.——Estherville has 6 or 8 cases of smallpox.

**Society Meeting.**—At the annual meeting of the Pottawattamie County Medical Society, held in Council Bluffs, the society established a postgraduate course as suggested by the American Medical Association. The following officers were elected: President, Dr. J. Harvey Cole, Council Bluffs; vice-president, Dr. Grant Augustine, Minden; secretary-treasurer, Dr. Daniel Jackson, Council Bluffs, and delegate to the state society, Dr. Henry B. Jennings, Council Bluffs.

**Personal.**—Owing to the mysterious disappearance of Dr. George W. Jones, Keokuk, Christmas night, Dr. Charles E. Ruth, formerly of Keokuk, but more recently of Denver, has been recalled to his college work in the former city.——Dr. John Skinner, Des Moines, said to be the oldest practitioner of Des Moines, is reported to be failing gradually.——Dr. Channing E. Dakin, Mason City, has been appointed medical member of the Insane Commission of Cerro Gordo County.

## MARYLAND.

**Smallpox on a Steamer.**—On the arrival of the North German Lloyd steamer *Cassel* at Baltimore, January 5, a Russian steerage passenger was found to be suffering from smallpox. He was placed in quarantine together with the attendants and the ship was fumigated.

**Large Mortality.**—The mortality of Baltimore for the week ended January 11 was the largest in its history. There were 294 deaths, equivalent to an annual death rate of 21.70 per 1,000. Pneumonia was the cause of death in 49 cases, influenza in 31 and bronchitis in 14.

**Cornerstone Laid.**—The cornerstone of the Dr. Samuel Leon Frank Memorial Hospital, adjoining the Hebrew Hospital, was laid January 8 with appropriate ceremonies. Dr. Harry Adler, president of the Hebrew Hospital, presided. The new structure will consist of three buildings.

**Personal.**—Dr. Marshall L. Price, Baltimore, has been appointed secretary of the State Board of Health.——Drs. Thomas S. Cullen and Frank D. Gavin, Baltimore, have returned from a trip to the western coast of Florida.——Dr. C. Z. Wingard, Funkstown, was thrown from his sleigh in a runaway accident in Hagerstown recently and severely injured, his shoulder being dislocated.

**School Inspection.**—The medical inspectors of the Baltimore health department, during October, November and December, inspected 34 schools and 23,416 children; 10,396 were found to be suffering from ailments of some kind; 468 were excluded from school and 447 were ordered to be vaccinated. The chief ailments were as follows: Mouth, 3,106; throat, 2,606; nose, 2,105; hair, 1,799; eyes, 1,471; nervous system, 173, and ears, 104.

## MASSACHUSETTS.

**Epidemic Diseases.**—Measles is reported to be epidemic in Beverly, where more than 40 cases have occurred.——Pneumonia is reported to be prevalent in Boston, where during the week ended December 21, 60 deaths were attributed to the disease.

**Communicable Diseases.**—A nurse in Worcester City Hospital died from cerebrospinal meningitis, January 4, after an illness of a few hours.——Dr. C. E. Richardson, an interne at the Worcester City Hospital, a ward master and a nurse at the hospital were removed to the Isolation Hospital, January 6, suffering from scarlet fever.

**Personal.**—Dr. Michael H. Lynch, Chicopee Falls, has been appointed city physician, vice Mayor-elect Joseph O. Beauchamp. ——The trustees of Springfield Hospital, at their meeting January 7, added the name of Dr. Walter R. Weiser to the surgical staff and that of Dr. George D. Weston to the consulting staff, and Drs. Howard A. Lanpher and Benjamin F. Janes, Jr., were elected house physicians.——Dr. Robert A. Rice has been elected city physician of Fitchburg.

**State Sanatorium for Tuberculosis.**—The committee of the Essex North District Medical Society on the location of a state sanatorium reported to the society that the commission provided by the legislature of 1907 the members of which were appointed by the governor, had voted to recommend the purchase of a tract of 186 acres in the town of Georgetown, about 15 miles north of Boston. The site is admirably situated and bordered by a railroad. The present legislature will be asked for an appropriation to complete the work. The estate has been taken on an option of $18,000.

**Opposes Publishing of Names in Lay Press.**—Resolutions were adopted by the Essex North District Medical Society deprecating the appearance of names of physicians in the lay press, in connection with operation cases and other professional work as being opposed to the best interests of medicine and public good, and stating that it was the duty of every physician to protest against such use of his name, and also that the publishers of newspapers in the district should omit such mention. It was voted to send a copy of these resolutions to each physician in the district, to the publishers of newspapers in the district, to the secretary of the district society and to THE JOURNAL of the American Medical Association.

**Public Medical Lectures.**—The Faculty of Medicine of Harvard University announces the following course of free public lectures at the Harvard Medical School on Sunday evenings and Saturday afternoons:

January 4—"Some Recent Discoveries in the Physiology of Digestion" (illustrated), Dr. Walter B. Cannon.
January 5—"Human Gait" (illustrated), Dr. Edward H. Bradford.
January 11—"The Modern Crusade Against Typhoid Fever," Dr. Elliott P. Joslin.
January 12—"Common Salt," Dr. Lawrence J. Henderson.
January 18—"The Causes of Nervous and Mental Disease," Dr. Philip Coombs Knapp.
January 19—"Fatigue, Its Effects and Its Treatment," Dr. George A. Waterman.
January 25—"Nervous Disorders of Children," Dr. William N. Bullard.
January 26—"Nervous Breakdown During Adolescence and Adult Life," Dr. James J. Putnam.
February 1—"Some of the Nervous Disorders of Adult Life, with Especial Reference to 'Habits,'" Dr. Edward W. Taylor.
February 2—"Popular Fallacies Regarding Insanity and the Treatment of the Insane," Dr. Henry R. Stedman.
February 8—"Alcoholism and Insanity," Dr. Charles P. Bancroft.
February 9.—"The Ear and the Telephone," Dr. Clarence J. Blake.
February 15—"The Interest of the Public in Surgical Progress," Dr. James G. Mumford.
February 16—"The Sick Child," Dr. Thomas Morgan Rotch.
February 22—"The Causes of Disease in Infants and Children," Dr. Charles Hunter Dunn.
February 23—"Rational Infant Feeding," Dr. John Lovett Morse.
February 29—"Syphilis, Its Nature and Dangers," Dr. James C. White.
March 1—"Smallpox and Vaccination," Dr. John Hildreth McCollom.
March 7—"The Problem of the Nervous Temperament in Children," Dr. George A. Craigin.
March 8—"Florence Nightingale and the Beginning of Surgical Nursing," Dr. J. Bapst Blake.
March 14—"Modern Methods for the Cure of the Insane" (illustrated), Dr. Owen Copp.
March 15—"The Relation of the Hospital to the Community," Dr. Abner Post.
March 21—"Mental Hygiene and the Prevention of Insanity," Dr. George T. Tuttle.
March 22—"Psychic Treatment of Disease: Its Limitations and Uses," Dr. Richard C. Cabot.
March 28—"What the People Should Know About Tumors," Dr. Howard A. Lothrop.
March 29—"The Development and Maintenance of Good Teeth," Dr. Charles A. Brackett.
April 4—"The Inflammations Due to the Commoner Pus Germs: Their Local and General Effects; Blood Poisoning," Dr. Charles A. Porter.
April 5—"Certain Dangerous Popular Delusions Concerning Grave Surgical Diseases," Dr. Maurice H. Richardson.
April 11—"Foods in Health and Disease," Dr. Maurice Vejux Tyrode.
April 12—"The Development of the Microscope," Dr. Harold C. Ernst.
April 18—"Some Preventable Diseases of the Skin," Dr. Charles J. White.
April 19—"The Relation of Animal Life to Human Diseases," Dr. Theobald Smith.
April 25—"The Cocain Evil," Dr. Charles Harrington.
April 26—"Tumors," Dr. William T. Councilman.

## MISSISSIPPI.

**Smallpox.**—The discovery of two cases of smallpox among white people at Hattiesburg, one patient being a schoolgirl, has caused the city authorities to take under consideration the closing of public schools and the ordering of compulsory vaccination.

**Personal.**—Dr. W. H. Doty, Hattiesburg, was severely injured in an elevator accident recently.——Dr. Joseph A. Tabor, Scranton, has been named by the Jackson County Medical Society as representative from the sixth congressional district on the State Board of Health.——Dr. Robert L. Turner, Meridian, is reported to have declined the professorship of surgery, tendered him by the Mississippi Medical College.

**Hospital News.**—At the annual meeting of the North Mississippi Conference of the Methodist Episcopal Church South, held December 7, resolutions were adopted endorsing the proposal to erect, at a place considered most eligible, a Methodist hospital, to cost, when completed, not less than $200,000.—— The board of trustees of the Mississippi State Charity Hospital, Vicksburg, asked that the appropriation for the support of the institution be increased to $25,000 a year, on account of the increase in the number of patients treated and the increase in the cost of supplies. During the biennium just passed 4,075 patients were given treatment at the institution.

## NEW JERSEY.

**Personal.**—The Dover Township Committee has appointed Dr. Frank Brouwer, Toms River, township physician, vice Dr. Ralph R. Jones.——Dr. Andrew F. McBride assumed his duties as mayor of Paterson January 1.——Dr. Archibald F. Alexander has been appointed as a member of the Paterson Police and Fire Board, and Dr. John L. Leal, a member of the Board of Health.

**December Vital Statistics.**—During the month ended Dec. 15, 2,745 deaths were reported; of these, 455 were of infants under 1 year, and 862 of individuals under 60 years and over. Chief among the death causes were: Diseases of the nervous system, 352; diseases of the circulatory system, 318; tuberculosis, 302; diseases of the digestive system, 301; pneumonia, 216; nephritis, 203; diseases of the respiratory system, 175; cancer, 112, and suicide, 36. Of the communicable diseases, diphtheria caused 52 deaths; typhoid fever, 39; scarlet fever, 26; whooping cough, 19, and measles, 8.

## NEW YORK.

**Tuberculosis Camps.**—The Red Cross anti-tuberculosis work in this state involves the formation of day camps for tuberculosis patients. Dr. Samuel W. Lambert is opposed to this form of concentration of energies.

**Personal.**—Dr. Hal B. Brownell was recently operated on at Buffalo General Hospital for appendicitis.——Dr. Eugene E. Hinman, Albany, has been commissioned first lieutenant and assistant surgeon, N. G., N. Y., and assigned to Company C of the Tenth Infantry.——Dr. Ira A. Hix has resigned as health officer of Binghamton.——Dr. Earl G. Danser, Buffalo, medical examiner, is confined to his house as the result of being run down by an automobile, January 2.

**Communicable Diseases.**—Measles is still prevalent in Buffalo.——Owing to an epidemic of smallpox in Kingston, the board of health on January 5 ordered all places of amusement and public halls closed for two weeks, and also the closure of the schools for a further period of two weeks. There are about 80 cases of the disease, mostly of mild type.——Typhoid fever is reported to be epidemic in Putnam, where 16 cases have been reported.——An epidemic of diphtheria at Cameron has compelled the closure of the schools.

### New York City.

**Hospital Improvements.**—A four-story tuberculosis pavilion, with roof gardens, solarium and verandas, to cost $180,000, as well as a two-story pathologic laboratory to cost $40,000, and a residence for the medical staff to cost $80,000, are to be built on Blackwell's Island, plans for which have already been filed.

**Resignations.**—The following members of the medical board of the Sydenham Hospital resigned December 27: Drs. Edwin Beer, Herman J. Boldt, Charles G. Kerley, Linnaeus A. La Fetra, Seymour Oppenheimer, Gustav Seeligmann, Alfred N. Strouse and Alfred Wiener. The following adjunct members of the staff have resigned: Drs. Richard Weil, Richard Lewissohn, Arthur Stein, Joseph E. Fuld, De Witt Stetten, A. Richard Stern and Ernst Danziger.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended January 4, 478 cases of scarlet fever, with 33 deaths; 581 cases of measles, with 32 deaths; 344 cases of tuberculosis, with 158 deaths; 308 cases of diphtheria, with 36 deaths; 37 cases of typhoid fever, with 8 deaths; 25 cases of whooping cough, with 1 death; 11 cases of cerebrospinal meningitis, with 8 deaths, and 98 cases of varicella—a total of 1,882 cases and 276 deaths.

**Personal.**—Capt. James P. Warbasse, assistant surgeon, Thirteenth Infantry, N. G. N. Y., resigned December 30, and Dr. Eliot Bishop, Brooklyn, has been recommended as his successor.——Dr. John P. Moore, Astoria, in charge of the Queens Borough office of the New York Department of Health, Jamaica, has resigned and will resume private practice.——Dr. Peter Hughes, surgeon-in-chief of St. Catherine's Hospital, Brooklyn, was presented with a solid silver service containing 300 pieces on the occasion of his silver wedding anniversary.

**Death Rate Decreases.**—The death rate for the week ended January 4, was 18.46 per 1,000 per annum, as against 20.95 for the same week of last year. There were 1,565 deaths for the week, as against 1,721 for the same week of 1906. Heart disease showed a decrease, as there were 170 deaths from this cause, as compared with 186 for the corresponding week of last year. Deaths from pneumonia decreased to 329, as against 358 for the corresponding week of last year. The deaths from tuberculosis dropped from 181 of the corresponding week of 1906 to 329.

**Rockefeller Withdraws Support from Charity Committee.**—Last year Mr. Rockefeller gave $7,500 to the Committee on the Prevention of Tuberculosis of the Charity Organization Society, with the stipulation that $20,000 should be raised. The contributors were Robert S. Brewster, $2,500; Andrew Carnegie, $1,000; Harvey S. Fisk, $500; Edward S. Harkness, $5,000; John S. Huyler, $500; V. Everit Macy, $1,000; Grant B. Schley, $2,500, and John D. Rockefeller, $7,500. When Mr. Rockefeller failed to renew his subscription it was impossible to ask the others for their support. The relief work of this committee will in all probability have to be discontinued.

**Amendments to Sanitary Codes.**—At the last meeting of the board of health two sections of the sanitary code were amended. First, the section which provided that no unwholesome food should be brought into, stored or offered for sale in the city, was amended by adding that "any foods offered for sale anywhere in the city by dealers in foods shall be deemed as offered or held for sale as food." Second, the section which required all physicians and midwives to report all births at which they assisted is changed to read, "They shall file with the board of health reports of all births at which they assist, within ten days of the same." This amendment was necessary because many physicians and midwives when called to account for unreported births asserted that they had mailed their reports which must have gone astray. Now it will be necessary for all birth reports to be filed in person.

**School Hygiene.**—The superintendent of public schools, Dr. Maxwell, in his annual report which has just been submitted to the board of education, urges the formation of a department of school hygiene which would be under the direction of a medical man who would rank as an associate superintendent and who should have a sufficient number of physicians to examine all the children at least once a year. He should also have a sufficient number of nurses to visit the homes of sick children and to care for slight ailments in schools. He suggested that the charter be so amended that parents would be obliged to put children in proper medical condition to profit by public school education, and suggested also that the proposed medical officers would prosecute such parents as failed to comply with this requisition. The report says that there are 158.466 pupils in the schools who are backward because of physical defects.

**Governor Hughes' Message.**—In his message to the legislature, Governor Hughes said that reports would soon be submitted by the commission appointed to select a site for a hospital for the insane in the southeast part of New York State. He recommended that the appropriations for the purchase of adequate sites and for their improvement be made as promptly as possible. He suggested that the lease to the state of Ward's Island (the site of the Manhattan State Hospital), which will expire in 1912, should be extended if satisfactory arrangements can be made with the authorities of New York City. He recommended that in order to obtain desirable uniformity and to provide a method whereby necessary changes may be effected with due regard to the entire service of the state, provision shall be made for the classification and fixing of the salaries in the charitable institutions, in the hospitals for the insane and in the prisons by a board of

control on which the supervisory boards and officers of the various institutions shall have representation. Purchases of provisions and supplies can be made for the institutions by this same board, which would be much simpler and more economical than under the present methods. In regard to public health, he said that the waste of life and productive energy which result from the prevalence of tuberculosis required that every effort be made to limit, if not to destroy, this scourge. He recommended that the legislature adopt such measures as would tend to prevent the spread of this disease. Provision should be made for the notification and complete registration of cases and for the dissemination of necessary information. There should be suitable appropriations made to permit systematic effort under the direction of the Commissioner of Health. In regard to the laws relating to pure food, he said that these should be codified and presented in a single comprehensive statute. He recommended also a law which would prevent the sale of adulterated or improperly branded foods. He could not approve the law passed at the last session, as it contained provisions which would have made its provisions inoperative. It is important that such a law should be clear and precise, and make evasion difficult, if not impossible. With regard to the quarantine commissioners and health officer of the Port of New York, he said there was a divided authority. This division answered no useful purpose. By far the most important duties are performed by the health officer, and it would not add much to his duties or responsibilities nor require any increase in his compensation if he were charged with the duties now devolving on the commissioners. These offices seemed unnecessary and should be abolished.

## NORTH CAROLINA.

**Personal.**—Drs. Arthur P. Willis, Canton; Andrew J. Crowell, Charlotte; Nicholas G. Moore, Mooresville, and Guy S. Kirby, Marion, are taking postgraduate work in the East.——Major Charles S. Jordan, surgeon N. C. N. G., has been commissioned surgeon of the First Brigade with the rank of colonel.——Dr. Robert J. Gill, Henderson, is reported to be seriously ill with septicemia.——Dr. W. L. Blalock of Wake County has removed to Oklahoma.

**Insane Colony to be Established.**—At the meeting of the State Hospital Commission, held in Raleigh, January 2, it was decided to establish a colony capable of accommodating 100 patients of mildly insane type in connection with the State Insane Hospital, Raleigh, as soon as the necessary buildings may be erected. A small addition to the hospital for negroes at Goldsboro was ordered made. Also a new nurses' building to be added to the present buildings at the Morganton Hospital. When completed the present nurses' building will be used for the accommodation of nearly 100 additional patients.

**New Tuberculosis Sanatorium.**—Work on the new building at Greensboro for the proposed sanatorium for the treatment of tuberculosis has been suspended by the issue of a restraining order by the Superior Court of Guilford County. The order is only temporary and was heard on motion to make the same permanent at a special date of January 15. The injunction was secured at the instance of a number of citizens of Greensboro, who in their formal application allege that the defendant, Dr. Williams, is "erecting pest houses for the treatment of consumption and other dangerous diseases." The local press states: "The case will be bitterly fought to a finish, as the irate citizens are determined to leave no stone unturned to prevent the location of such an institution in their midst." On the night of January 8 a large portion of the foundation was secretly destroyed. Affidavits from a large number of leading physicians engaged in the treatment of tubercular disease will be submitted to the court to show that the community at large will in no wise have its relative healthfulness adversely influenced by the establishment of such an institution in Greensboro.

## OHIO.

**Personal.**—Dr. Stephen B. Marvin has been elected president of the Cincinnati Board of Education and Dr. Gustave L. Krieger president of the Board of Education of Norwood.——Dr. Louis Ransohoff has been elected assistant surgeon to the Cincinnati Hospital and Dr. Jesse Wyler assistant ophthalmologist at the same institution.

**Ohio Medical Teachers Meet.**—The third annual meeting of the Ohio Association of Medical Teachers was held in the afternoon and evening of December 27, and was the most successful in the history of the organization. About seventy-five members were present, besides a number of visitors, among them the presidents of several literary colleges of the state. Interest in this organization has increased, and its members feel that much good has been accomplished.

**Medical Members of Cincinnati Health Department.**—The medical members of the Health Department who took office January 1, are as follows: Health Officer, Dr. Mark A. Brown; chemist and bacteriologist, Dr. Frank H. Lamb; medical inspector, Dr. Benjamin F. Lyle; physician to the Tuberculosis Dispensary, Dr. Oscar W. Stark; milk inspector, Dr. J. Stewart Hagen, and assistant health officers, Drs. William L. Brodberger, Ernest O. Pucklitsch, Schuyler B. Tuthill, Frank C. King, Gerritt J. Fredericks, Thomas H. Forster, Joseph W. Hall, Edward H. Moss, William T. Lindsay, Thomas W. Hays, Joseph S. Podesta, Arnold G. Webb, Albert E. Hussey, Louis A. Molony, F. H. Bierbaum, Mitchel Fernberg, Sebastian A. Allgeier, Raphael W. Miller, William Stephan, Frank E. Kugler, Charles L. Wertheimer, Arthur Vos, John J. Conzett, T. D. Megure and J. W. Dodds.

## PENNSYLVANIA.

**Charitable Bequest.**—A bequest of $2,073.97 to the Allentown Hospital is contained in the will of the late Barbara Schaadt.

**Deaths by Violence.**—According to the bureau of vital statistics of the State Bureau of Health, there were 10,180 deaths from violence in the state in 1907. This gives a rate of 146.9 per 100,000 of population. The deaths were distributed among the principal forms of violence as follows: Suicides, 780; fractures, 537; burns and scalds, 847; drowning, 155; accidental gunshot wounds, 149; mine injuries, 983; railway accidents, 2,387, and homicides, 365. Of the total suicides 605 were male and 175 females. Of the various forms of suicide 24 were by gunshot wounds, 183 by poison and 150 by hanging. Of the suicides 7 were less than 15 years of age, the youngest being 12 years. The suicide rate per 100,000 of population was 11.2. In comparison with other cases, railroad accidents contributed the largest number of violent deaths. Of this number 228 were the result of street car injuries and 2,159 from steam railroads. The rate per 100,000 of population was 34.4.

### Philadelphia.

**Money for Charity.**—From a bazaar held for the benefit of the Frankford Hospital, $4,163.63 was realized.

**New Tuberculosis Dispensary.**—The Commonwealth of Pennsylvania Dispensary for Tuberculosis No. 21 was opened at 12 South Seventeenth Street, January 6. The institution will be under the supervision of Drs. Alfred Stengel and Albert P. Francine.

**New Hospital Ambulance.**—The first electric automobile ambulance to be used by a hospital in this city was placed in service January 3 by the Jefferson Medical College Hospital. The machine will cary 1,000 pounds and has a speed of 15 miles an hour.

**Influenza Situation.**—Influenza is widely prevalent throughout the city. About 16,000 pupils and 8 per cent. of the instructors in the various schools are suffering with the malady. Reports show that the outlying districts are affected to as great an extent as the central section of the city.

**Officers Elected.**—At the annual meeting of the College of Physicians January 1, the following officers were elected: President, Dr. James Tyson; vice-president, Dr. George E de Schweinitz; censors, Drs. Richard A. Cleeman, S. Weir Mitchell, Horace Y. Evans and Louis Starr; secretary, Dr. Thomas Neilson, and treasurer, Dr. Richard H. Harte.

**Hospital Reports.**—The report of the Germantown Hospital for December shows that 132 patients were admitted to the institution and that 1,218 patients were treated in the dispensary department.——The report of the American Hospital for the Diseases of the Stomach for 1907 shows that more than 1,500 persons applied for treatment.

**Nurses for Schools.**—The work of improving the physical condition of school children in the tenement part of the city which has been conducted by the Visiting Nurses' Society will be continued next year under the direction of the board of education. Council's finance committee has recommended an appropriation of $5,700. A chief nurse and five assistant nurses are to be appointed.

**Personal.**—Dr. B. Franklin Roger, who has served for several years as chief resident physician of the Municipal Hospital, has resigned.——Dr. Archibald G. Thomson, who was struck in the eye by a stray shot two weeks ago, while hunting in Georgia, is now able to go out and the sight of the eye will be saved.——Dr. E. G. Klopp has been appointed chief resident physician in Jefferson Medical College Hospital.——Dr. J. Stewart Rodman sailed for Europe January 3.

**Health Report.**—The total number of deaths reported for the week ended January 4 was 688, an increase of 87 over those

reported in the previous week and of 54 over the number reported in the corresponding week of 1907. The principal causes of death were: Typhoid fever, 13; diphtheria, 10; influenza, 28; consumption, 72; cancer, 21; alcoholism, 4; apoplexy, 37; paralysis, 9; heart disease, 7; acute respiratory disease, 147; gastritis, 5; enteritis, 14; cirrhosis of the liver, 6; appendicitis, 4; acute nephritis, 5; Bright's disease, 45; premature birth, 14; congenital debility, 12; old age, 13; suicide, 3; accidents, 16, and marasmus, 5.——There were 270 cases of contagious diseases reported, with 26 deaths, as compared with 188 cases and 23 deaths reported in the preceding week.

## SOUTH CAROLINA.

**Increase Payment to Medical Society.**—The City Council of Charleston has approved the amended contract between the city and the Medical Society of South Carolina, increasing the annual payment to the Society for the Treatment of the Pauper Sick and Injured to $28,800.

**Antituberculosis League.**—South Carolina has organized an antituberculosis league, with Dr. A. Bethune Patterson, Barnwell, president; Dr. William P. Porcher, Charleston, vice-president; Dr. C. Fred Williams, Columbia, secretary-treasurer, and Drs. Orlando B. Mayer, Newberry, chairman of the board of councilors of the state medical association; Theodore G. G. Croft, Aiken, and C. Fred Williams, Columbia, legislative committee.

**Memorial Infirmary.**—At the last meeting of the board of trustees of the University of South Carolina, provision was made for the erection of the new Wallace-Thompson Memorial Infirmary, for which $15,000 was given by Mrs. Anne Jeter. The building is to be one-story in height of brick with tile roof, and, in addition to the rooms for surgeons and living rooms, will contain a medical ward with a capacity of 12 beds and a contagious isolated ward to contain 6 beds.

**Hospital News.**—The Rock Hill Private Hospital has been sold by Dr. William W. Fennell to the physicians of Rock Hill, and will hereafter be conducted as a public institution.——The Union Hospital Association will erect a hospital in that place at a cost of $5,000.——Anderson is to have a hospital completed early this year to cost about $32,000.——The Aiken County Medical Society has decided to establish a hospital to be known as the Aiken County Hospital with a capital stock of $5,000, divided into shares of $25 each, to be erected in the city of Aiken.——The Columbia Hospital, Richland County, contemplates erecting a medical and surgical building, two stories and basement in height, to accommodate 72 patients, at a cost of $30,000.

**Society Meetings.**—At the annual meeting of the York County Medical Society, held in Rock Hill, December 5, the following officers were elected: President, Dr. J. Roddey Miller, Rock Hill; vice-president, Dr. William M. Love, McConnellsville; secretary, Dr. Ebenezer W. Pressley, Clover, and delegate to the state society, Dr. Isaac A. Bigger, Rock Hill. ——Spartanburg County Medical Society, at its annual meeting, December 20, elected the following officers: Dr. James L. Jefferies, Spartanburg, president; Dr. S. T. D. Lancaster, Pauline, vice-president; Dr. W. G. Sexton, Spartanburg, secretary, and Dr. William J. Chapman, Lamar, treasurer.——The Clarendon County Medical Association, at its annual meeting, December 19, elected the following officers: President, Dr. A. S. Todd, Manning; vice-president, Dr. George L. Dickson, Manning; secretary-treasurer, Dr. Charles B. Geiger, Manning; delegate to the state medical association, Dr. W. Hagard Woods, Turbeville, and alternate, Dr. W. Muldrow Brockinton, Manning.——At the annual meeting and banquet of the Medical Society of the State of South Carolina, held at Charleston, December 9, the following officers were elected: President, Dr. John L. Dawson; vice-president, Dr. Archibald E. Baker; secretary, Dr. Allen J. Jervey; treasurer, Dr. Rowland Alston; censor, Dr. Charles W. Kollock; delegate to the state association, Dr. Thomas P. Whaley, and commissioners of Roper Hospital and trustees of the Roper Hospital fund, Drs. Henry P. Jackson, A. Johnston Buist and Edward F. Parker.——At the annual meeting of the Greenville County Medical Society, held December 2, the following officers were elected: Dr. J. Wilkinson Jervey, Greenville, president; Dr. L. L. Richardson, Simpsonville, vice-president; Dr. W. W. Monett, Greenville, secretary, and Dr. R. Emmett Houston, Greenville, treasurer.

## WISCONSIN.

**Communicable Diseases.**—Influenza is epidemic in La Crosse, where at least 500 cases are said to exist.——Several cases of scarlet fever have broken out in Sparta.——A large number of cases of smallpox are reported at Algoma.

**Personal.**—Dr. John R. Goodfellow, Superior, was operated on for appendicitis at St. Mary's Hospital recently.——Dr. John C. Adams, Superior, has been appointed local surgeon to the Great Northern Railway, vice Dr. William E. Ground, resigned.——Dr. and Mrs. Walter H. Nielson, Milwaukee, have sailed for Europe.——Dr. F. Gregory Connell, Oshkosh, has been appointed first lieutenant and assistant surgeon, Wisconsin N. G., and assigned to the Second Infantry.——Dr. Wendell D. Neville, Eagle River, has gone to southern California for the winter.——Dr. John R. Minahan, Green Bay, has been appointed surgeon of the Superior Division of the Chicago, Milwaukee & St. Paul Railway, vice the late Dr. Hans M. Beck.——Dr. Robert E. Minahan, Green Bay, has been appointed local surgeon to the Chicago & Northwestern Railway. ——Dr. Ira M. Martin, Green Bay, has been appointed oculist to the Chicago, Milwaukee & St. Paul Railway.——Dr. Richard C. Buchanan, Green Bay, has been re-elected city physician. ——Dr. Robert B. Clark, Monroe, has been appointed local surgeon of the Illinois Central Railway, vice Dr. F. W. Byers, resigned.——Dr. John W. Coon, retiring superintendent of the Milwaukee County Hospital, Wauwatosa, will take charge of a sanatorium for tuberculosis near Milwaukee.——Dr. Ferdmann M. Schulz has assumed his new duties as superintendent of the Milwaukee County Hospital.——Dr. Sherman E. Wright, Marinette, has returned from Austria.——Dr. Arthur T. Holbrook has been elected president and Dr. Gerhard A. Bading secretary of the Milwaukee Emergency Hospital.——Dr. Julius L. Schauer, Milwaukee, has been committed to the County Hospital for the Insane on a temporary writ.

## WYOMING.

**Smallpox.**—At Cheyenne, 7 cases of smallpox have appeared and the patients have been placed under strict quarantine.

**Hospital Notes.**—A hospital is to be established at Keystone, in the heart of the Douglas Creek tie camp, where attention is to be given to the ill and injured employés of the Carbon Timber Company.

**Society Meeting.**—The Sheridan County Medical Society, at its annual meeting, December 16, in Sheridan, elected the following officers: Dr. Charles E. Stevenson, president; Dr. William H. Roberts, vice-president; Dr. Frederick A. Hodson, secretary; Dr. Anna G. Hurd, treasurer, and Dr. T. E. Marshall, censor, all of Sheridan.

**State Medical Society.**—The Wyoming State Medical Society elected its officers by mail, official ballots being mailed to every member of the society. The following officers were elected: President, Dr. Charles E. Stevenson, Sheridan; vice-presidents, Drs. William A. Burgess, Cheyenne; Charles D. Bodine, Douglas, and Neil D. Nelson, Shoshoni; delegate to American Medical Association, Dr. George L. Strader, Cheyenne, and alternate, Dr. T. E. Marshall, Sheridan, the secretary and treasurer holding over. Sheridan was selected as the next place of meeting, and by a vote of 53 to 6 the society decided to adopt the *Western Medical Review* as the official organ of the society.

## CANADA.

**New Building at Kingston.**—The new building for Queen's University, Kingston, toward which the Ontario government donated $50,000, was opened January 14. Dr. Llewellys F. Barker, Baltimore, was present and delivered an address.

**College Officers.**—The following are the officers of the Manitoba College of Physicians and Surgeons for the current year: President, Dr. William Rogers, Winnipeg; vice-president, Dr. Murrough C. O'Brien, Dominion City; registrar, Dr. John S. Gray, Winnipeg, and treasurer, Dr. James Patterson, Winnipeg.

**Personal.**—Dr. Adam A. Beatty, Toronto, has returned from graduate work in England.——Dr. Donald J. Armour, Toronto University, 1904, has been appointed Hunterian professor of surgery in the Royal College of Surgeons, London, Eng.—— Dr. F. E. Etherington has resigned from the secretaryship of the medical faculty of Queen's University and will devote all his time to the department of anatomy of which he is professor.

**Many Births in Montreal.**—According to statistics prepared by the health official of Montreal, Dr. Joseph E. Laberge, the birth rate of Montreal for 1907 was about 44.20 per 1,000 of population. The average birth rate of that city for a period of 19 years is put down at 37.92 per 1,000. That was for all nationalities, but the French-Canadians can be accredited with about 40 per 1,000. The birth rate of Montreal is higher than that of Toronto by 13.21 per 1,000. Comparison with other cities shows an excess as follows: Breslau, 5.61; Prague, 13.18; Munich, 5.5; Vienna, 6.5; Milan, 10.0; Rome, 12.3; St. Petersburg, 6.5; London, 8.7; Paris, 16.4; New York, 10.0, and Philadelphia, 13.0.

## FOREIGN.

**Hospital Food Strike.**—The patients at the hospital in Orlau, Austria, recently became so disgusted with the food given them that they protested and struck, all of the patients refusing all food for one day. Investigation revealed numerous abuses, which were remedied, and a better table provided.

**Appropriations for Preventive Medicine in Germany.**—The last German budget contains an appropriation of $50,000 for repression of typhoid fever, $14,000 for a bacteriologic station near Berlin, and $1,250 for compilation of the vital statistics in tabulated form. A million dollars were also appropriated for improving the housing of the poor.

**By-Effects of Vaccination at Vienna.**—The mayor or bürgermeister of Vienna not long ago stated, in referring to the recent smallpox epidemic there, that more persons had died from the vaccinations than from the smallpox during the epidemic. The local medical societies have been collecting data since, and have been unable to learn of any death or serious injury in consequence of vaccination. The mayor, however, will not retract his words.

**Hospital Abuse by the Well-to-Do.**—The *Klin.-therap. Wochschr.* states that a court at Prague recently had a case before it in which a hospital physician sued a wealthy man for payment for an operation which had been performed by the former in a public hospital. The court asked advice from the local medical chamber, which stated in its response that the fee asked was the usual one under the circumstances, but that a wealthy person should not be admitted to the hospital nor operated on there, as the public hospitals are destined solely for the poor. The hospital physicians should, therefore, turn away persons known to be well-to-do. In case of doubt as to the applicant's financial standing, they can perform the needed operation, but have no right to ask a fee for operations or attendance in the public clinic or hospital.

## LONDON LETTER.

*(From Our Regular Correspondent.)*

LONDON, Jan. 1, 1908.

### Improvements in Hospital Management.

At the annual meeting of King Edward's Hospital Fund this great charitable agency was reported in a highly satisfactory condition. The income for 1907, after deducting expenses, was $735,000, which allows a distribution of $600,000—a sum larger than has yet been divided—and $250,000 in excess of last year. Ninety-nine hospitals applied for grants this year, as against 105 last year, the difference being due to amalgamations brought about largely by the pressure which the fund has been able to bring to bear in the interests of economy. It has also established a uniform system of keeping accounts at the different hospitals which renders comparison easy, and the hospitals have been found very willing to make use of the information provided as to the lowest cost at which materials can be bought. A system of visitation has been established by which every participating hospital is inspected and reported on each year by physicians and laymen, and no grant is made unless the circumstances and needs of each one are before the committee at the time the matter is considered. Founded by King Edward when he was Prince of Wales, to help the voluntary hospitals of London, the fund has proved of immense benefit to every hospital. Its authority is undisputed and its financial strength is remarkable in the history of charity.

### A Plan to Check Infant Mortality at Oxford.

People who know only the ideal side of Oxford—its magnificent pageant of colleges and churches—might imagine that it was one of the healthiest, as it is one of the fairest, of towns. But it contains certain unhealthy spots where infant mortality is high. The health committee of the corporation, inspired by the successful campaign against the infant mortality inaugurated at Huddersfield (previously described in THE JOURNAL), has inaugurated a similar scheme. As soon as the birth of a child is reported in the insanitary areas a woman health visitor calls at the house to give advice, if needed. In many cases none is needed and no more visits are paid, but in others the reverse is true. The results obtained from this simple procedure are astonishing. In two of the worst areas the death rate among infants under one year has been reduced by 40 per cent. and brought down to 97 per 1,000, as against 133 for England and Wales, and 146 for the six largest towns. So satisfied was the health committee with the first fruits of its labor that it enlarged the scope of its work in a novel way and embraced the whole city of Oxford (containing 50,000 inhabitants) in its infant visiting scheme, and went a step farther by organizing its infant milk supply on a scientific basis. By means of the regular supply of humanized milk to mothers unable to suckle, a great change has been wrought in the health of their babies. In many cases the cost of the milk is paid by the parents in full; in others partly so. Thus the cost of the experiment has been small. Public recognition of the success of the experiment has taken a novel fashion. A reception has been given by the health committee to the parents of the children who have participated in the milk cure. Thriving infants were exhibited who, under previous circumstances, would have been the most miserable specimens of humanity in the city. Dr. Omerod, the health officer, has pronounced the experiment to be most encouraging and expressed the hope that the scheme will work in with the medical inspection of school children and raise the physique of the next generation.

### Medical Inspection of Schools.

The board of education issued a memorandum on the medical inspection of children, which may be described as the first step toward giving practical effect to the education act of 1907. The act imposes on every local authority on and after Jan. 1, 1908, the duty of providing for the medical inspection of school children at or about the time of their admission to a public elementary school, and on such subsequent occasions as the board of education may direct. It also empowers these authorities to make such arrangements as may be sanctioned by the board for attending to the health and physical condition of the children. The memorandum is intended to lay the foundation of a new system on a broad basis, so as to allow for future expansion under the guidance of experience. School inspection must be carried out in conjunction with the existing public health authorities and under the supervision of the health officer of each locality, but subject to the control of the medical department of the board of education instead of the medical department of the local government board. Thus school hygiene will be treated as an integral portion of the sanitary administration of the country. The education board will collate the records made by the local authorities and will present an annual report to parliament. At recent health conferences various speakers have assumed that inspection of school children should be annual, but the view is expressed in the memorandum that three inspections during school life will, for the present at least, be sufficient. The first inspection will take place on admission to the school; the second about the third year (about the seventh year of age), and the third about the sixth year of school life. A further inspection before departure is said to be desirable where practicable. In some areas it is thought that it may be best for this to take the place of the third inspection. The local authorities are asked to keep in view the desirability of formulating and submitting for approval of the board schemes for amelioration of evils revealed by medical inspection, including in centers where it appears desirable, the establishment of school surgeries or clinics, such as exist in some cities of Europe, for further examination and the specialized treatment of ringworm, dental caries and diseases of the eye, ear or skin. The board has under consideration such questions as school ventilation, the curricula of infants' departments; the training of crippled, feeble-minded, blind, deaf, or mentally deficient and epileptic children; special schools for other types of afflicted children; physical culture for pupil-teachers; the standard of medical examination for pupil-teachers, for training-college students and for teachers. Further, the board urges the necessity of instruction in the principles of hygiene of all students in training colleges so that they may be able to deal profitably with the subject in schools.

### A Record in Quackery.

*Truth* relates a story which constitutes a record in quackery. The victim was a man suffering from consumption who, when he recognized that he had been taken in all round, pleaded in extenuation that he was ready to catch at any straw. In 1903 he was treated by the notorious Drouet Institute for the Deaf for catarrh, though his case had been officially reported as one of tuberculosis. Finding out the fraud of this establishment, he fell into the Weidhaas Institute of Burgess Hill, where he paid $15 a week. His treatment included among other features the Weidhaas star tea. The only result was that he lost five pounds in one week. He next experimented with the Herne treatment, which has its headquarters at Leeds, for which he was charged $25 for a consultation and first installment of treatment. After this he consulted a "blind specialist," and after spending some dollars on him, he got a relative who was partly paralyzed to consult him and found that the "specialist" treated both consumption and paralysis with the same remedy, quinin and iron.

# Therapeutics

**[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]**

## Acute Laryngitis.

To abort this condition the same methods advised to abort an acute coryza (THE JOURNAL, Dec. 21, 1907, page 2100), may be inaugurated, or perhaps better, a combination of tartar emetic, as:

| ℞. | gm. | | |
|---|---|---|---|
| Antimonii et potassii tartratis ..... | .05 | | gr. i |
| Pulveris opii ..... | .10 | or | gr. ii |
| Hydrargyri chloridi mitis ..... | .20 | | gr. iii |
| Sacchari lactis ..... | 1 | | gr. xv |

M. et fac chartulas, 10.

Sig.: A powder every hour until nausea, purging, or drowsiness occurs.

[The above prescription, made into tablets, is best dispensed by the physician.]

Cold compresses about the throat are valuable in this inflammation. Inhalations of steam, or the insufflation of sedative powders, as bismuth subgallate, may be given as needed. If the inflammation tends to persist, ammonium chlorid preparations are valuable.

Edema of the glottis should always be considered as possible, and is by no means an infrequent occurrence. Such a condition being diagnosed, or even suspected, should call for expert treatment by a laryngologist.

In acute laryngitis watery sprays should generally not be employed, although inhalations of steam are of benefit. Mild oil sprays, on the other hand, especially after the acute stage is passed, are of benefit, and something similar to the following is useful:

| ℞. | gm. or c.c. | | |
|---|---|---|---|
| Thymolis ..... | .20 | | gr. iii |
| Mentholis ..... | 1 | | gr. xv |
| Eucalyptolis ..... | .50 | or | m. x |
| Olei pini sylvestris ..... | 1 | | m. xv |
| Petrolati liquidi ..... ad | 100 | | ad, fl℥iv |

M. et Sig. To use in an atomizer.

The patient should inhale the vapor from the above every three or four hours, or a teaspoonful of it may be inhaled, from hot water, through a cone.

Or,

| ℞. | c.c. | | |
|---|---|---|---|
| Olei pini sylvestris ..... | 10 | or | fl℥ii |
| Tincturæ benzoini compositæ, ..... ad | 100 | ad | fl℥iii |

M. et Sig.: Inhale a teaspoonful from boiling water three or four times a day.

Painting the upper part of the chest and throat with iodin has been recommended in this inflammation, but as the skin is very tender in this part, considerable irritation may readily be caused, and quite a lasting stain of the part may occur, hence it would better not be used, especially in girls and women. An iodin ointment is sometimes used, as:

| ℞. | gm. | | |
|---|---|---|---|
| Unguenti potassii iodidi..... | 25 | or | 3v |

Sig.: Use externally as directed.

Or,

| ℞. | gm. | | |
|---|---|---|---|
| Unguenti iodi..... | 25 | or | 3v |

Sig.: Use externally as directed.

Either of the above ointments rubbed into the larynx region two or three times a day is of some value. Any stimulating liniment will do almost the same amount of good, as:

| ℞. | c.c. | | |
|---|---|---|---|
| Spiritus ammoniæ aromatici ..... | 25 | | fl℥i |
| Olei terebinthinæ ..... | 25 | or | fl℥i |
| Linimenti saponis ..... ad | 100 | ad | fl℥iv |

M. et Sig.: Use externally. (To be thoroughly shaken before using.)

If some stimulant is to be used on the throat of a young child, either camphorated oil or the simple soap liniment is strong enough.

In young children it is sometimes best, even if membrane is not believed to be present, especially when there is a croupy cough, to give sufficient ipecac to cause vomiting, best in the form of the syrup.

Various combinations of eucalyptol and menthol (other than the above) may be used for inhalation. The main point is that these should not be made too strong or too irritant. Camphor is also sometimes used for this purpose, as:

| ℞. | gm. or c.c. | | |
|---|---|---|---|
| Mentholis ..... | .50 | | gr. x |
| Spiritus camphoræ ..... | 20 | or | fl℥vi |
| Tincturæ benzoini compositæ ..... ad | 100 | ad | fl℥iv |

M. et Sig.: Inhale a teaspoonful from a bowl of hot water three or four times a day.

If there is congestion in the lingual tonsil region or in the throat, as well as in the larynx, either a potassium chlorate gargle or an astringent gargle, as the following, may be used:

| ℞. | gm. or c.c. | | |
|---|---|---|---|
| Acidi tannici ..... | 3 | | gr.xl |
| Glycerini ..... | 10 | or | fl℥ii |
| Aquæ ..... ad | 200 | ad | fl℥vi |

M. et Sig.: Use as a gargle three times a day.

Also there are various official troches that may be allowed to dissolve in the mouth to aid in relieving this congestion or stop the chronic inflammation. These are:

℞. Trochiscos acidi tannici No. 20.

Sig.: Let a troche dissolve in the mouth every three hours.

[Each troche contains .06 gram (1 gr.) of tannic acid.]

Or,

℞. Trochiscos ammonii chloridi. No. 20,

Sig.: Let a troche dissolve in the mouth once in three hours.

[Each troche contains .10 gram (1½ grs.) of ammonium chlorid.]

Or,

℞. Trochiscos cubebæ, No. 20.

Sig.: Let a troche dissolve in the mouth once in three hours.

[Each troche contains .02 gram (⅓ gr.) of oleoresin of cubebs.]

Or,

℞. Trochiscos gambir, No. 20.

Sig.: Let a troche dissolve in the mouth once in three hours.

[Each troche contains .06 gram (1 gr.) of gambir (catechu).]

Or,

℞. Trochiscos krameriæ, No. 20.

Sig.: Let a troche be dissolved in the mouth once in three hours.

[Each troche contains .06 gram (1 gr.) of krameria (rhatany).]

Troches or tablets of potassium chlorate should *never* be allowed to dissolve in the mouth, as concentrated potassium chlorate, even if dissolved in saliva, swallowed into the stomach can be the cause of local irritation, gastritis, and a future gastric ulcer. Potassium chlorate dissolved, gargled, and spat out is useful, harmless, and sedative to inflammations of the mouth and throat. Potassium chlorate swallowed, except in minute doses, is poisonous, and can do serious harm.

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**Hyposulphites in Dermatology.**—Hyposulphites, especially the sodium hyposulphite, is an invaluable remedy in parasitic disease of the nail substance, in the form of a solution about half an ounce of the salt to a pint of tepid water; the affected nail to be immersed therein twice daily, for ten to fifteen minutes.—N. E. Aronstam, in *Central States Medical Monitor.*

# Correspondence

## Race Suicide for Social Parasites.

DAVENPORT, IOWA, Jan. 7, 1908.

*To the Editor:*—In Dr. W. T. Belfield's recent Chicago address on the above subject, an abstract of which appeared in THE JOURNAL, January 4, he is credited with views which, it apears to me, should not pass unchallenged by the medical profession. His advice, if generally sanctioned by reputable physicians, would tend strongly to race suicide not confined to the parasitic classes, and would leave the spread of the venereal diseases unchecked. It can not have been carefully considered by THE JOURNAL, I think, or it would hardly have been published without comment.

That it is both the right and the duty of the state to restrict the breeding of confirmed criminals and other defectives in every practicable way is not questioned; and, as I see it, castration for such would be a practicable and wise provision both for the safety of the state and for the physical and moral advancement of the people. But when it is proposed, by cutting the vas, to put a stop to procreation while purposely leaving to the brute his impelling desire, his potency and "pleasure," it is hard to conceive of a course of unwisdom more blind. Rape and the spread of the veneral diseases would remain unchecked, and adultery, including miscegenation, and all forms of consenting vice, would be encouraged, the fear of telltale progeny being removed.

Strong as are these objections to Dr. Belfield's dangerous proposition—and they are sustained by his own statement that in Indiana, where the process has been legalized, hundreds of criminals have been sterilized at their own request—an even stronger one is suggested by his further statement that, within his own personal knowledge, married men have chosen this means of prevention as preferable to criminal abortion. He seems not to perceive that it is no less culpable for the physician to lend his aid to the one measure than to the other, or to realize the encouragement to race suicide in this all too convenient means of sterilization without loss of power.

When, too, the husband and the illicit lover are told that they can play fast and loose with their vasa deferentia, cutting off and on the testicular secretion by an operation "less serious than the extraction of a tooth," it would be hard to conceive of a recommendation fraught with more far-reaching evil and disaster. I trust THE JOURNAL, as the exponent of the profession, will present this measure in its true light.

C. H. PRESTON.

[COMMENT:—The above letter was referred to Dr. Belfield and we print below his reply.—ED.

"The worthy critic laboriously constructs formidable demons of straw, and then demolishes them with great fury and success. By similar reasoning he can prove that arsenic and strychnin should never be prescribed, because they have often been used in perpetration of murder; that labor should never be induced to save the life of mother and child, because criminal abortion is so common. In short, he condemns the intelligent, lawful and beneficial use of sterilization, because it can be prostituted to harmful and objectionable abuse."]

## Death Following Injection of Diphtheria Antitoxin.

WAKE FOREST, N. C., Jan. 9, 1908.

*To the Editor:*—The sudden death following an injection of diphtheria antitoxin, reported by Dr. Gillette, Cuba, N. Y., in THE JOURNAL, January 4, page 40, is worthy of general notice. The case in question was one of bronchial asthma and the antitoxin was administered for its relief. Since several other fatal cases similar to this one have come to light it would appear possible that there is a connection between this disease and a grave susceptibility to diphtheria antitoxin.

Cases of sudden death following small injections of diphtheria antitoxin have been recorded—though death from this cause is a very rare occurrence. Certain of these cases have undoubtedly been due to the status lymphaticus. Osler reports two such cases in his "Practice" (Ed. 1901, p. 827). One of the individuals was the son of Professor Langerhans of Berlin and excited considerable attention at the time. Park, in his Harvey Society lecture, Jan. 20, 1906, mentions several fatal cases in which it was probable that the status lymphaticus existed. He also mentions other cases in which death seemed imminent, but the patients were saved by the employment of emergency measures. These patients described sensations very similar to those which occurred in Dr. Gillette's case.

In regard to Dr. Gillette's tentative explanation that the status lymphaticus was present in his case, it appears that that explanation would be improbable for two reasons. First, on account of the age of his patient. The condition obtains almost exclusively in children and young adults. Second, in the autopsy record there is no mention of hyperplasia of the lymph tissue of the body, which anatomic feature is usually marked in this condition.

I have the temerity to suggest a connection at least between the asthmatic condition and the possible action of the antitoxin. The respiratory center in chronic asthmatics is in a constant state of pronounced irritability due to the accumulation of carbon dioxid in the blood at frequent intervals. It is thus in a condition to be easily acted on by further irritants, one of which we may presume is diphtheria antitoxin. It is well known that excessive irritation leads to depression which in case of the respiratory center would lead to severe or fatal results. This hypothesis would explain the symptom of dyspnea of which the patient suddenly complained just before death. Further, if this be true, it should lead to extreme care in the administration of diphtheria antitoxin to all patients in whom there is an accumulation of carbon dioxid in the blood.

LEWIS M. GAINES, M.D.

## The "Hyoscin-Morphin-Cactin" Anesthesia.

REPLY OF THE ABBOTT ALKALOIDAL COMPANY.

CHICAGO, Jan. 6, 1908.

*To the Editor:*—In your issue of December 21 you devoted some four pages to the discussion of the following subject: "The 'Hyoscin-Morphin-Cactin' Anesthesia. An Interesting Example of the Subordination of Science to Commercialism."

The most striking thing on the first page of your presentation is the reproduction of two paragraphs, without context, from an article of mine appearing in the *Chicago Medical Recorder*, in which I call attention to the favor which the remedy is winning in the field of obstetrics, because it has reduced the pain and consequently the fear of childbirth. I can not, of course, read beneath the troubled surface of your mind as to just what impression you intended to convey by this truly sensational presentation. I assume, however, that you wished to question the truth of my statements. It may be of interest to know that the opinion concerning the sociologic value of hypodermic anesthesia and its effect on race suicide did not originate with me, but was first expressed concerning scopolamin-morphin and most strongly voiced by Holt, writing from Gauss' clinic at the University of Freiburg. It does correctly express, however, the sentiments of hundreds of physicians who have used H.M.C. (Abbott), as shown in their letters to me, an exhibit of any reasonable number of which we will gladly show you.

I wish first of all to deny *absolutely* the statment made in THE JOURNAL article concerning hyoscin-morphin-cactin anesthesia, that "everything connected with its promotion has conveyed the impression that this method of anesthesia is entirely new," or as otherwise and elsewhere stated in the same article: "It is evident that it has been the intention of the manufacturers to convey the impression that this method of anesthesia originated with them." Nothing can be farther from the truth. As a matter of fact there have appeared in our literature numerous references to the use of scopolamin and morphin for anesthetic purposes. The *American Journal of Clinical Medicine* has contained fully as many abstracts of the European literature on this general subject as any other medical journal—more, we believe, than has your own, which has been so utterly closed to anything favoring or fairly discussing the American side of the movement while wide open to the wildest, most prejudiced criticism.

The longest contributed article on hypodermic anesthesia ever published in *Clinical Medicine* was on "Scopolamin-Mor-

phin in Obstetrics," which gave a detailed account of Gauss' work in the University Women's Clinic at Freiburg, published in May, 1907, this article being written by Dr. William Holt, an American, at that time studying at Freiburg. What we have claimed—and we still maintain it—is, that our hyoscin combination is superior to the scopolamin combination which was used by early investigators, with unfortunate results in some cases, said gruesome statistics being erroneously held to apply to improved conditions as they now exist. *Priority* of suggestion of hypodermic anesthesia we have never claimed.

In one sense, however, hyoscin-morphin-cactin anesthesia certainly is new. Scopolamin-morphin anesthesia, in spite of its eight years of history, was "new" to the doctors of America when we first manifested an interest in it. There had been a number of deaths reported, mainly abroad. It was discredited by the journals, and only a few American surgeons, perhaps a dozen or two, had had the courage to try it. We took it up, sought to discover its defects and remove its dangers—to convert it, if possible, from a merely experimental procedure into a reasonably safe and satisfactory aid to the work of surgeon and obstetrician, as well as to the internist in colics, spasms, etc., and in all those efforts we have succeeded, if sales to some 20,000 American physicians and surgeons and thousands of ringing testimonials are worth anything.

More than two pages of THE JOURNAL article are devoted to an attempt to prove the identity of hyoscin and scopolamin. Our advertising literature is extensively quoted and every effort made to show that our expressed preference for hyoscin to scopolamin is an evidence of purposeful deceit or of ignorance. We shall not repeat these quotations, though they are garbled, and in one instance at least a word is omitted from the body of a sentence written by me which *completely changes its meaning*—this without any mark to show that such omission has been made. It makes quite a difference in your favor to say: "It's the synergistic which produces the result," instead of *"It's the synergistic whole,"* (referring to the published formula) our claim and text.

We do not purpose to enter with detail into a controversy on this point, which, as we shall endeavor to point out a little later, is not the main and centrally important point at issue. But it is noteworthy that THE JOURNAL admits that "the German literature, until recent years [very recently, in fact.—W. C. A.], furnished an abundance of material from which to quote to prove that the alkaloid as made from hyoscyamus is different from that made from scopola," and that "there have been echoes of the old controversy until recently." This does not quite accord with the statement made in the next sentence, that the identity of the two substances "was settled long ago." We might even quote the following statement by Prof. John Uri Lloyd (*Eclectic Medical Gleaner*, January, 1907): "In our opinion, one has no more the right to dispense scopolamin for hyoscin than to label hyoscyamus as belladonna."

The chemical identity of pure hyoscin and scopolamin no one disputes. For argument's sake let us pass for the present—admit, if you prefer—the pharmacologic identity of the two substances—provided we can be sure that in both cases we are dealing with a substance of absolute purity. If when pure they are therapeutically identical, we are content; satisfactory therapeutic result and the safety of the clinician is our only desire.

Your article says: "The pharmacopeia of a nation is the standard according to which drugs are manufactured and by which they are judged. In all countries these standards are recognized by law; *they are the highest authority.*" (Italics mine.) Let us examine the German and the United States Pharmacopeias, which are quoted extensively to prove the identity of hyoscin and scopolamin and see if they are a sufficient and safe authority for us to depend on. Pharmacopeias are guides by which the pharmacist is supposed to serve the doctor, provided the doctor chooses to be so served, the right of choice and specification being vested in him.

I know I am antagonized on this point by you, but the fact remains, as voiced by Hatcher in your issue of January 4, who, in his excellent paper on "The United States Pharmacopeia," says: "It is obviously not the province of pharmacists to decide for physicians what remedies they are to use."

While pharmacopeias are officially accepted as "authorities" no reasonable man has ever asserted that they are flawless. Indeed, no sooner has a pharmacopeia appeared than it has ever been made the immediate object for attack. This has been the case in Germany even more than in the United States. This criticism of "official statements" is true to-day concerning scopolamin.

While there may be little discussion over the identity of absolutely pure hyoscin with absolutely pure scopolamin, it has been pointed out—and especially in Germany—that the official (pharmacopeial) tests for purity are entirely inadequate. In the United States Pharmacopeia the tests for hyoscin hydrobromid (or scopolamin hydrobromid) are, from a practical viewpoint, for identity only; as regards impurities they are worse than weak, and you ought to know this to be a fact.

Indeed, the only tests of this character distinctly given are for carbonizable impurities (sugar, gum, etc.) and morphin, the grossest of adulterants! There is no mention of the optical rotation tests; no suggestion of the possibility of the presence of the really common and as regards the second often exceedingly dangerous impurities, atroscin and apoatropin. Indeed, a sample of scopolamin which apparently perfectly satisfied pharmacopeial requirements might be loaded with these substances and be correspondingly dangerous.

The same is true of the German Pharmacopeia; and in Germany much more has been said on this subject than in America. Says Kobert (*Riedel's Berichte*, November, 1904), "The commercial preparation (scopolamin) are obviously a mixture of active scopolamin with some other base. Hence, there should have been introduced into the latest German Pharmacopeia tests that would assure the purity of the active scopolamin hydrobromid. This requirement was aimed to be fulfilled by demanding about 12 per cent. water. But this criterium is not worth very much. About optical activity the book unfortunately says nothing, and about the melting point, not the right thing, so that a *slightly hydrous atroscin might even be preferred to the true active scopolamin.* It is not strange that many practitioners have not been and are not giving their patients the active, but a nearly inactive (optically inactive) article." A powerful article, thus unknown, may, therefore, conceal any degree of danger.

The impurities above mentioned, and which as we have shown, have been common in scopolamin are, in the main, atroscin and apoatropin. Neither of these is readily detectable by purely chemical tests, the optical rotation being depended on to determine their presence. Pure scopolamin and pure hyoscin are levo-rotatory; atroscin and apoatropin are optically inactive—do not cause deviation of light rays. Atroscin is not toxic; apoatropin is toxic and it is now believed that the deleterious side-effects occurring when impure scopolamin is given are due to the presence of this very toxic alkaloid. Its exclusion, therefore, as we have claimed, is a matter of the utmost importance, especially when the remedy is to be given to its maximum effect, as in the induction of hyoscin-morphin anesthesia—hypnotic narcosis.

Says Kobert (*Riedel's Berichte*, November, 1904): "Since the presence of inactive scopolamin (atroscin) is without deleterious influence, there necessarily must be contained in the scopolamin of commerce some other substances, optically inactive, but pharmacologically very active and very toxic." Again he says: "Scopolamin in general, or at least that of particular factories, is a most questionable preparation, the use of which not only can not be recommended with a clear conscience, but it must be warned against." These deleterious and dangerous effects he ascribes to the presence of apoatropin, saying: "The presence of this base, therefore, in the scopolamin of commerce would in man give rise to precisely the same side-effects as observed by Lewin and Guillary (local irritation, psychic excitation, spasms, delirium, dizziness, cyanosis). Hence I venture to contend that all commercial specimens of scopolamin hydrobromid which have produced (and are so doing to this day) the above deleterious effects were contaminated with this base."

This is practically the same conclusion reached by other German investigators, and men like Gauss, who have used scopolamin with the greatest success have insisted most strongly on the necessity of having a drug of the utmost purity—one entirely free from this toxic base, apoatropin. And it is a striking fact that the men who have had the highest success with scopolamin and have become enthusiastic in its use (and are now largely using pure, hyoscyamus-derived hyoscin) are those who have insisted on the use of something better than commercial scopolamin; while those who have condemned it are men like Hocheisen, who have been careless in this most important matter, a carelessness little short of culpable, which our chemical critic, oblivious to therapeutic result, would commend.

In striking contrast with Kobert's broadly scientific insistency for purity is the position of certain members of the Council, and the pronounciamento in THE JOURNAL, in which the most sweeping statements have been made concerning the danger of scopolamin (likewise hyoscin) while not a word has been said concerning variations in the quality of scopolamin, and the possibility that impurities in the drug (our contention) are a factor in the early reported mortality and present bad side-effects. Apoatropin is ignored and rotation tests apparently undreamed of. Why? The writers of the attacks on us have leaned heavily on the "authority" of the Pharmacopeia as all-sufficient—in this case a feeble if not "a broken reed."

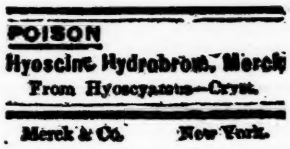
A word concerning the source of apoatropin: This substance seemed to be formed in part in the process of manufacture; in part to preëxist in the solanaceous plants. Whether it is equally abundant in scopola and hyoscyamus we have not as yet sufficient data to determine accurately, but there are certain facts which at least point towards its greater frequency in the former, and its presence or absence should always be and is determined by the conscientious, profession-protecting pharmacist by proper tests of each individual specimen.

There is unquestionable evidence enough of the necessity for the surgeon or obstetrician who desires to secure safe and satisfactory results, using a preparation of hyoscin (or scopolamin) which is free from apoatropin. The question naturally arises: "Are the preparations of this remedy offered to the profession satisfactorily?" Since the Abbott Alkaloidal Company has been probably the largest purchaser and dispenser of this alkaloid for the last two years our opportunities for investigation have been pretty good. Regarding scopolamin (from scopola) we find that there is the widest variation as to quality. Samples have been obtainable giving optical rotation tests varying all the way from —2 to —23. We have in our possession at the present time a sample of scopolamin, made by one of the great German chemical houses, giving a test of —9. Some months ago we had another testing —7, this test being verified by Mariner and Hoskins of this city. Within the past week we have obtained another in the open market of this city (also the product of one of the great German houses) giving only —9. All of these samples, however, would apparently satisfy the pharmacopeial requirements as to purity—likewise our critic, and raise the very mischief at the clinical end. This is the "stuff" the doctor doesn't want.

We have not found the same degree of variation as regards hyoscin from hyoscyamus. Within the last two years we have used a very large quantity of this alkaloid. The lowest degree of optical rotation we have found in true hyoscin was —16, the highest —22, the average being in the neighborhood of —20. In other words the hyoscin obtainable by us has been of remarkably uniform quality—this in striking contrast with the exceedingly variable quality of the scopolamin on the American market during the same period.

You insinuate that we ourselves may not use hyoscin *from hyoscyamus*, and, to bolster up this covert but perfectly obvious slur, you quote from letters received from the representatives of prominent German manufacturing houses. It is true that it would be exceedingly difficult to prove by any chemical test the difference between the hyoscin from hyoscyamus and the scopolamin from scopola; and it is also true that we have not rested our confidence on any such tests. But we are none the less assured that we have not been deceived.

Hyoscin is not made in America. We have bought it (the genuine, subject to all tests for purity) very largely, as THE JOURNAL correctly assumes, from Merck & Company, their label, under which we have bought it, our critic to the contrary, being as follows (reproduction from photograph):




When we first put out this anesthetic tablet we had no difficulty in obtaining the true alkaloid, labeled "from hyoscyamus." Appreciating from its prompt acceptance by the profession what the demand would be we promptly took all we could get. Later the New York representatives of the firm found difficulty in furnishing us with this product in the quantities desired (which is natural enough when it is remembered that the proportion of hyoscin in hyoscyamus is very small, and the true alkaloid, therefore, correspondingly more expensive to produce). We insisted, and Feb. 14, 1907, wrote them as follows:

> We desire to know, positively and definitely, from you if the hyoscin hydrobromid that we are getting from you is true to its label—if it is made direct from hyoscyamus and not from scopola. Answer positively and by wire with confirmation and details by letter. As to the claimed chemical identity of the two substances we are familiar and we do not want the scopola product. Kindly advise us, and promptly.

In reply to this letter we received the assurance that their sales of hyoscin to us were "from hyoscyamus," though in the same letter they wrote us "we can not promise to keep you supplied with hyoscin from hyoscyamus. Later lots may be made from one of the other sources according to the exigencies of the market on raw material." Now we either did receive true hyoscin from Merck & Company or they deliberately deceived and misled us as to its source, fraudulently labeling their product "from hyoscyamus," under the U. S. guarantee No. 7—which we do not for one minute believe.

Our orders for hyoscin from Merck & Company practically exhausted their supply of this (hyoscyamus-derived) alkaloid, and in the summer of 1907, while they would give us all they could get, they notified us of their inability to supply us longer. We confess that this "stumped" us, and, fearing that we might be compelled, though yet well in stock, to resort to scopolamin, we at that time purchased a supply of the best we could find in the market (optical rotation —23). This supply, however, we are glad to say, is as yet practically intact in our hands, a small amount only having been used for experimental purposes. In November, 1907, a special representative was sent abroad by the Abbott Alkaloidal Company and was able to find a sufficient supply of hyoscin "from hyoscyamus," added to what we are able to obtain from other sources, to supply even our rapidly increasing needs for some time to come.

Now, some may ask, Why not use and recommend high-rotation scopolamin instead of hyoscin? It is probable that if the best quality of scopolamin were always forthcoming this would prove reasonably satisfactory, perhaps quite so. But I think I have shown that a scopolamin even sufficiently pure to meet pharmaceutical requirements, likely to be dispensed by retail druggists and made into tablets by many purely commercial manufacturers, runs great danger of being really impure and dangerous, from the unsuspected presence of apoatropin. Furthermore, we have found true hyoscin very uniform in quality and the results obtained from its use have been so good that we do not feel justified in making a change; and finally, in spite of "authorities," we remain of the opinion that true hyoscin and scopolamin, or "hyoscin from scopola" as obtainable on the market, are not of identical quality and action. Our results with true hyoscin have more than justified our confidence in it and our preparation of "hyoscin, morphin and cactin compound" containing it has been endorsed by the profession in no uncertain way.

We drop the question of "identity" here. At this time when we are contending for truth and right as against misrepre-

sentation and fraud, we object to the foisting of hyoscin from scopola or other mydriatic sources onto the profession. If it is scopolamin say so and let us use it as such if we desire. To do otherwise and to sustain the practice is both to perpetuate and to countenance, aye, to uphold a fraud. Give us a scopolamin equal to and identical with true hyoscin from hyoscyamus, such as we are using, call it scopolamin, not hyoscin, and the fight is off. Purity of drug to produce best therapeutic result is our only contention.

And now a few words concerning cactin—or cactus. This is not a "new" substance. Cactus has been before the profession for forty years. The eclectic literature is full of it, the first studies I have found concerning it dating back to 1864. I might quote extensively the literature on the subject, but it is hardly necessary. The fact is that it is hardly possible to pick up an eclectic publication without seeing something concerning it. The regular text-books have also taken it up, took it up years and years ago, and praise of its action may be found in the works of Hare, Potter, Shoemaker, Butler, Solis-Cohen and others. Thousands of physicians, of all schools, have testified to its therapeutic activity—to its unmistakable, and unquestionable value in properly selected cases. Preparations from cactus are made by many houses.

Cactin, you insist, is a "secret" "nostrum"—because identifying chemical tests were not available—and because only we made it. You question the truth of our statements concerning it; apparently even questioned its source. At a time when split-hair technicalities were not insisted on as now, and on what we then considered good authority, we did years ago list cactin as a "glucosid," to the tests for which it in a large measure reacts; when this technical error (theoretically true, but not entirely so) was called to our attention we corrected it in our lists and literature as promptly as possible, and so announced through the columns of *Clinical Medicine*.

We certainly endeavored to put ourselves right just as soon as the point was raised, although the truth was, and is, as we then believed and still believe, though seeking "light," that the glucosidal principle predominates in cactin.

When we were carrying cactin as a glucosid in our list you were still carrying the advertisement of antikamnia. Your Pharisaism concerning past "sins," therefore, becomes the more nauseating. [The Antikamnia advertisement has been refused by THE JOURNAL since 1895; cactin was called a glucosid in the 1906 price-list of the Abbott Alkaloidal Company.—ED.]

Finally, in an effort to satisfy, we called and still call cactin a concentration, which is, we believe, as correctly descriptive of the preparation as any term available. The term is used by practically all drug manufacturers: John Wyeth & Co., Sharp & Dohme, and others, including Parke, Davis & Company, in whose catalogue an excellent definition may be found.

Now, as we have repeatedly said, there is nothing secret about cactin, and it is in no sense a "nostrum." We have freely given to interested doctors coming to our laboratory any information available concerning it; and have invited members of the Council to come and investigate for themselves. They will not come. We will do more.

We have carried cactin in our list for more than ten years. We first made it from the excellent eclectic liquid preparations available, buying them in the open market and concentrating them ourselves. I tried the products of various houses and was best satisfied with that put out by the William S. Merrell Chemical Company, of Cincinnati. I therefore entered into a trade arrangement with them, they agreeing to collect for us large, definite, contracted-for-in-advance quantities of true cactus (there are hundreds of varieties), for which their facilities were unexcelled, and also to prepare, from our specifications, a special concentrated liquid preparation, from which certain known-to-be inert portions of the plant were excluded, this liquid being cask-stored in their laboratories in adequate quantity and shipped to me as required, when final concentration is made in our own plant.

All the details of the method employed by the Merrells I do not know myself, hence could not and can not possibly give them to others. On that point the house writes me as follows:

> So far as the process of manufacture is concerned, that brings up an entirely different question, and one which we were obliged to answer the Council with regard to our normal tinctures and green drug fluid extracts: that our process of manufacture and extraction was the outgrowth of nearly 75 years of labor, study and experience, and it was not reasonable for them to ask us to publish, for the benefit of our competitors, information which it has cost us so much to obtain.

When this highly concentrated liquid cactus (five times fluid extract strength) is received by us from Merrell, it is slowly concentrated at a very low temperature and with extreme care, so that the activity of the drug can not possibly be impaired, the resultant retaining all the active ingredients of the green drug. The points to be remembered are: 1, that cactin is no more a "secret" remedy than is cactus itself; 2, the therapeutic action of cactin is believed to be identical with that of cactus; 3, that it is in no sense a "secret nostrum," and that any statement to this effect is unfair, unjust and untrue.

Considerable chemical study of cactus has been made in my laboratory, and we have determined the presence of a glucosid, although I am not as yet assured that this is the active or at least the only active medicinal principle contained therein. Mr. R. W. Proctor, chemist for the Merrell Chemical Company, assures us that they have determined the presence of both an alkaloid and a glucosid, but so far we have not been able to obtain from any single principle the desirable and definite results obtainable from the concentration of proximate principles we market as "cactin." There is room here for work by our erudite critic. Why not get busy?

It will be noted our critic says the word "cactin" should designate a glucosid or some other active principle ending in "in," with "e" final it should designate a glucosid or a resinoid, and may (and does in this instance) designate a concentration or other as yet indefinite proximate principle, but the unfortunate omission of "e" final in many alkaloids, as well as other definite principles, adopted by THE JOURNAL and some others, has so broken into and broken up efforts at exactness and consistency that one must now know the principle and all about it before he can know what is meant by the names used in your pages.

I must dissent from the theoretical conclusion that because cactin is devoid of a digitalis-like, strychnin-like, or of any toxic action for that matter, it is therefore therapeutically worthless. Clinical reports from real workers in the field are far too numerous and too uniformly favorable to the preparation to be dismissed by unnecessarily inconclusive laboratory experiments, that would deny to the doctor his ability, even his right to judge. Pharmacologic investigations of products of this class are still in their infancy. Practically nothing satisfactory to the clinician has been done along this line. As regards cactus, no manufacturer, so far as I know, has initiated such experiments. My failure to experiment along this line is therefore neither strange nor unusual. Like others, I have had confidence in the clinical results reported by hundreds of competent and distinguished physicians, and in my own experience.

Right here I want to say that you fail to inform your readers that the experiments of Professor Matthews of Chicago University (whose report you say you have in hand ready to publish) were commenced at my initiation and made at my expense. I met Professor Matthews, after arranging for an interview by letter, and it was agreed that he was to make tests of various preparations of cactus, and of cactin alone and in various combinations. I freely gave him permission to publish his studies, he suggesting at the time the *American Journal of Physiology* or *Science* as proper media. Does this look as though I was afraid of publicity?

As material I supplied him with samples of cactin, both in liquid form and trituration, and also samples of the fluid preparations of cactus of two standard houses. A few days later he telephoned me, "Doctor, you have a remarkable preparation"—telling me some very interesting and flattering things about its action, which, he said, were revealed in his first experiments. That was early in November. November 13 I got a letter reporting negative results, but without details; December 16 I received one more letter (in reply to one of my own) with more negative results—each letter less than a sheet of writing paper, with still no details, no report on anything but cactin—nothing about the other cactus preparations.

That's the last I heard from him. At the time his second letter was received, his work, for which I paid, must have been in the hands of the editor of THE JOURNAL of the Association, who, he must have known, was attacking me and my product. Although I paid for these studies, although they were taken up at my request in my desire to learn all possible concerning cactin, I never received a detailed report of his experiments; have had no opportunity to discuss them with him. Instead of helping me to make my product better, if possible, his secret work, if he did any, is given freely as a further club to my enemies. Is this honorable? Is it worthy of a great university?

Language somehow seems inadequate to express my opinion of a scientific "worker" of this character. I hope I may be excused if I feel some doubts as to the value of reports from such a source.

Meanwhile, I am having careful studies made of this product, both pharmacologic and clinical, by men whose standing and attainments cannot be questioned, broad in scope, and I believe trustworthy in character. I regret that the rapid growth of my business, the limited room as yet available, and the small number of my scientific helpers have made it impossible to do full work of this character in my own laboratory. I shall get to it in time. But in the meantime I do not propose to be stampeded into undue haste by your unfriendly attitude. I have confidence in cactin, and before I get through I propose to know all there is to know about it; to prove that I am right or to acknowledge that I am wrong. I can afford to bide my time—and the multitude of friends who have confidence in my integrity will stand by me, will wait with me till the problem can be worked out. Cactin is one criticized, questioned, product among over six hundred against which it is not dared to raise a hand.

Hyoscin, Morphin and Cactin Compound ("H-M-C, Abbott"), is a good preparation; explain it as you will, it is impossible to "go behind the returns," to deny results—for no preparation offered to the profession within recent years has received such uniform tributes of praise from those who have used it as has this. I have on file letters testifying to its worth from hundreds, yes thousands of members of the American Medical Association, men of the highest standing, who know that I am telling the absolute, unadulterated truth! It is non-secret. The trademark, to which you object, is one of brand only, to designate our preparation. Every manufacturer is free to put up a hyoscin, morphin and cactin compound, leaving off my name and trademark—and indeed, several are already offering such a product. My special claim rests, primarily, on the superior quality of my product, which my brand-trademark designates.

THE ABBOTT ALKALOIDAL CO.,
By W. C. Abbott, President.

[COMMENT.—We have omitted from the above communication considerable matter that refers to the Council on Pharmacy and Chemistry, as it is entirely beside the question, since our article was not inspired by, or submitted to, the Council.[1] We have also eliminated remarks regarding the motives prompting our exposure, as they, too, are irrelevant. In spite of this, we feel that we owe an apology to our readers for printing as much of this "reply," with all the irrelevant matter it contains, as we have done. It is never satisfactory to discuss purely scientific questions with those who are financially interested in the subject-matter under discussion; their solution depends on scientific evidence and not on vehement protestations, assertions of individual integrity or personal reflections on others. What our readers are interested in is the answer of the company to the *facts*, the direct accusations in our article, which were mainly:

1. That the Abbott Alkaloidal Company's anesthetic contains nothing new in any scientific sense.

2. That there is no difference between hyoscin-morphin-cactin anesthesia and scopolamin-morphin anesthesia, for the reasons that "hyoscin" and "scopolamin" are merely synonymous terms for the same alkaloid.

3. That "cactin" is a nostrum and is practically inert.

In its reply, the Abbott Alkaloidal Company seems to have been at great pains to obscure these, the main questions at issue, by irrelevant matter and ambiguous verbiage. The predominant impression created by reading this reply is one of "it is and it isn't"—"now you see it and now you don't—mostly you don't." Nevertheless, we shall attempt to analyze what is said.

1. *The Abbott Alkaloidal anesthesia contains nothing new in any scientific sense.*—This is met by the assertion that this claim was never made; nevertheless, we read again, "our hyoscin combination is superior to the scopolamin combination"—presumably through the substitution of hyoscin and the addition of cactin. The words "new" and "our" occur repeatedly in the literature. No one ever accused the company of having invented "hypodermic anesthesia" in general.

2. *Hyoscin and scopolamin are merely synonymous terms for the same alkaloid.*—The reply to this statement is most interesting from a psychologic standpoint:

We quoted the pharmacopeias as final and legal authorities for the use of these terms. This meets with the reply that the purity tests of the pharmacopeias are not what they ought to be—"do you see it?"

Now as to the most important question: Is the "scopolamin" identical with "hyoscin"? the company has this to say:

"The chemical identity of pure hyoscin and pure scopolamin no one disputes." So this point is conceded with truly remarkable candor. The company is somewhat less clear as to the pharmacologic identity, but does not seem to feel quite safe in challenging, so admits it "for argument's sake." The heavy ordnance is reserved for the "therapeutic identity" in the same paragraph as follows:

"If when pure they are therapeutically identical, we are content; satisfactory therapeutic results and the safety of the clinician is our only desire." Do you see it? If not, peruse the following:

"The men who have had the highest success with scopolamin and have become enthusiastic in its use . . . are those who have insisted on the use of something better than commercial scopolamin." Then they are therapeutically identical? But wait. . . .

"It is probable that if the best quality of scopolamin were always forthcoming, this would prove reasonably satisfactory, perhaps quite so." Then it is conceded that they are identical? Not so fast!

"Finally, in spite of 'authorities,' we remain of the opinion that true hyoscin and scopolamin, *as obtainable on the market*, are not of identical *quality* and action." (Italics ours.) Do you see it? When you read this sentence without emphasizing the italics, it sounds like a bold Abbottesque statement that, therapeutically, they are not identical, whatever the facts may show. Then if you read it, emphasizing the italics, it ——but oh, fudge! What's the use! *Mir wird bei alledem so dumm, als ging mir ein Mühlrad im Kopf herum!* This is enough; especially since we feel quite safe in leaving to our readers the question whether two substances, conceded to be chemically and pharmacologically identical, can be judged to be therapeutically different on the strength of this kind of medieval logic.

If the company's only or main reason for preferring hyoscin to scopolamin is that the former is apt to be more pure, let it say so frankly, and the subject will become one for intelligent investigation, were it worth while. At present we know nothing about this purely commercial question, except what the Abbott Alkaloidal Company tell us.[2] This is interesting enough, but what it tends to show is, not that hyoscin should

1. Incidentally, with all that has been said by the Abbott Alkaloidal Company, especially in its journal, the *American Journal of Clinical Medicine*, regarding the treatment it has received from the Council on Pharmacy and Chemistry, it might be stated that the company has submitted to the Council just two products—Nuclein and Neuro-Lecithin—and after a large amount of correspondence between the Council and the company, the Council has finally been able to approve only one of these—Neuro-Lecithin.

2. The fact that a year ago it was possible to find on the market the alkaloid as made from hyoscyamus is not strange, nor does it alter the facts. It is quite possible that this supply had been on hand one, two or even more years, for a few grains would last a long time when there was as little call for it as was the case before the artificial demand was created in this country by advertising. Possibly the manufacturers would still be glad to make the alkaloid from hyoscyamus on a special order; and it would not be necessary to send a man to Europe to place such an order.

be preferred, but that only the pure alkaloid should be used; if the associated apoatropin or atroscin is really as dangerous as is made out, then the commercial hyoscin could not be safely used; and, according to the company's own figures, it has obtained commercially an even purer scopolamin than hyoscin.

One more thought! This company has been dogmatically asserting that hyoscin is safer than scopolamin. This has been the keynote, the central thought, in the advertising literature. What evidence has it on which to base such assertions, or to assume that there have been fewer deaths from the use of its H-M-C than from the recognized scopolamin-morphin combination? What are the mortality statistics? How many deaths have occurred from the use of the tablets? And especially, what has been the infant mortality from the use of so much morphin in obstetrics? We have seen no statistics published on the subject.

Passing now to the last point:

3. *"Cactin" is a nostrum and is practically inert.*—Abbott replies, "There is nothing secret about cactin." Then he proceeds to describe it as the evaporated residue from a liquid preparation of cactus, from which certain inert portions of the plant are excluded, by a process which is so much a secret that he does not even know it himself! "Do you see it?" What class of constituents is extracted—whether those soluble in water or alcohol or ether or gasolin; what is the relation of the strength of this product to the crude drug—these very interesting data, all of the greatest importance to the scientific prescriber, are veiled in mystery—but not in secrecy!

Finally, as to the action of "cactin."

As we understand it, the company now acknowledges that it has no reliable evidence regarding the activity of "cactin," and is "having careful studies made of this product, both pharmacologically and clinically, by men whose standing and attainments can not be questioned."

Would it not have been better for the company to have had these investigations made, and have found out whether or not this was a valuable product before advertising it in such an extravagant manner as it has been doing for so many years? Would it not be advisable, also, for this company to await the results of this investigation before repeating these extravagant claims?

After carefully reading the communication from the Abbott Alkaloidal Company, we see no reason for changing the statements made four weeks ago, and reiterate the conclusions then reached.—ED.]

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### LEGAL MEANING OF VACCINATION.

BOSTON, Jan. 9, 1908.

*To the Editor*:—In THE JOURNAL, Dec. 7, 1907, page 1936, Dr. Bradford A. Booth, of Pittsburgh, asks: "What is the legal meaning of vaccination? (If possible cite decision giving such definition.)"

In answer to Dr. Booth, you said: "We know of no legal decision giving the meaning of vaccination."

In "Commonwealth v. Pear," and "Commonwealth v. Jacobson," (183 Mass. 242), the Supreme Judicial Court of Massachusetts decided: "A defendant charged with violation of a requirement of the board of health of a city or town that all its inhabitants shall be vaccinated, can not introduce evidence to show what a vaccination consists of, this being a matter of common knowledge; or of the grounds of his refusal to comply with the requirements, this involving a matter of opinion, and also being immaterial; or of the alleged injuries or dangerous effects of vaccination, the legislature being the judges of what the welfare of the people demands."

CHARLES HARRINGTON.

### PHENOLPHTHALEIN.

AUGUSTA, ME., Dec. 12, 1907.

*To the Editor:*—1. Can you tell me how phenolphthalein produces cartharsis? 2. Is it a safe drug? 3. Do the combinations with menthol, salicylic acid and soap work better than phenolphthalein alone?

S. J. BEACH.

1. Our available knowledge respecting phenolphthalein was given in THE JOURNAL, March 30, 1907, p. 1133; January 5, pages 64 and 70; April 20, 1907, p. 1351. Its physiologic action has not so far been experimentally determined. 2. No untoward results seem to be reported from physiologic dosage. 3. We think that clinical experience has so far been insufficient to warrant a definite reply to this question.

### WATER AS A THERAPEUTIC AGENT.

DEVON, PA., Jan. 3, 1908.

*To the Editor:*—Your most excellent article on "Internal Use of Water as a Therapeutic Agent," in THE JOURNAL, Nov. 30, 1907, p. 1854, has been read with much interest and profit, and I thank you for it. Your list of qualifications regulating its use is very complete. One must think that had pure water been rather freely used before the conditions which forbid and also those which call for its use had developed, the conditions would probably never exist. One may question whether even in inflammation of the kidneys, weakness of the heart muscle, and insufficiency of gastric secretions, a reasonable use of pure water would not benefit by its solution, and consequent diminution of waste lodged in tissues—either muscular or nervous. Gentle exercise after ingestion of water aids its efficiency. Your suggestion of distilled water is good, yet I remember that J. M. Da Costa in discussing this point once claimed that he was curiously and unaccountably disappointed in the use of distilled water.

WILLIAM M. CAPP.

### GERMAN MEDICO-THEOLOGICAL JOURNAL.

CHICAGO, Dec. 30, 1907.

*To the Editor:*—Some time ago there was an item in THE JOURNAL relative to the establishment in Germany of a journal to discuss borderland questions about religion and medicine. As I can not find it now, I ask you to let me know in what manner it was published or the name of the journal.

DANIEL S. HAGER, M.D.

ANSWER.—The *Zeitschrift für Religionspsychologie* is published by K. Marhold, Halle, Germany. As stated in THE JOURNAL, June 1, 1907, the aim of the new journal is to discuss the borderland questions of theology and medicine, to develop a healthy religious life—the "psychagogics of practical theology," and to study the development of the religious life under various influences. The list of contents of the first number included "Biblical Religious Psychology:" "Religious Conscientiouness" and "Obsessions and Religious Practices." The editors are a clergyman and a physician.

### BRUSH TREATMENT OF DIABETES?

A PENNSYLVANIA SUBSCRIBER asks where he can find reference to the Brush treatment of diabetes.

### THE VON RECKLINGHAUSEN TEST OF HEART FUNCTION.

NEW YORK, Dec. 30, 1907.

*To the Editor*: Has the v. Recklinghausen method for testing heart function been reviewed in THE JOURNAL at any time? If not, will you give the technic?

N. B. F.

ANSWER.—The method of von Recklinghausen was published in 1901 in *Archiv. f. exper. Path. u. Pharm.*, vols. lv and lvi. It depends on the proposition that the product of the frequency of the pulse by the amplitude of the blood pressure is equal to the amount of blood expelled by the heart in a second divided by the distensibility of the circulatory system or the relative increase in contents of the blood vessels. These relations must be found by determining the systolic and diastolic blood pressure and their difference (the pulse pressure) and also the rate of the pulse. The method appears to be defective because it gives no reliable method of determining the distensibility of the circulatory system; as this is unknown, it is impossible to calculate from it the second's volume, which is the measure of the heart's work. It can not be determined with certainty from the average blood pressure, as has been proposed, because the distensibility of some of the vessels may be increased, while the average blood pressure is maintained at a high level by contraction of other areas of the circulatory system. Some investigations indicate, however, that the distensibility of the circulatory system can not vary greatly, so that the product of the pulse pressure by the pulse frequency may be taken as practically a measure of the heart's activity, especially when it is desired to compare the functional power of the heart at different periods in the same person.

### TREATMENT OF LEUCOPLAKIA.

KANSAS CITY, KAN., Jan. 2, 1908.

*To the Editor:*—Will you kindly publish the most satisfactory treatment for syphilitic leucoplakia of the fauces. In a case I now have it covers the entire tonsils, uvula, back of pharynx and tongue. My medical literature is silent on this subject, and so far I have been unable to stop the progress of the disease.

WM. H. WALKER.

ANSWER.—In most cases, leucoplakia occurs in syphilitics, but this is not by any means always true. Even when occurring in syphilitics, however, it is not a manifestation of active syphilis, even tertiary, but is a parasyphilitic affection and does not yield

to specific treatment. It is a chronic inflammatory process with hyperkeratosis of the horny layer of the mucous membrane and treatment is directed to the relief in every possible way of irritation of the patches. After syphilis, the most important factor in the production of the patches is tobacco smoking, and this is the first thing which should be prohibited. Drinks and foods of all sorts which are so hot or so highly seasoned as to be at all irritating should be avoided. Further the mouth should be rinsed at least twice a day with a bland alkaline solution, like Dobell's solution, after which the patches should be painted with tincture of myrrh or tincture of benzoin. The chief benefit arising from these is probably due to the precipitation of the myrrh or benzoin on the patches, which forms a sort of varnish. Under these measures the condition will frequently disappear, but in many instances, if the patches have become well established, they persist in spite of such treatment. When that is the case more radical measures must be used if the patches are to be gotten rid of. In many cases they may be made to disappear by persistent exposures to *x*-rays, just short of the point of producing a reaction. Where it is feasible a good plan of treatment is to strip off the mucous membrane from the patches or destroy the patches by actual cautery. The patches should be given serious attention, because they are not infrequently followed by epithelioma.

## IS SACCHARIN HARMFUL?

EVANSTON, ILL., Dec. 7, 1907.

*To the Editor:*—In the Physician's Manual of the Pharmacopeia and National Formulary (Hallberg & Salisbury), at the bottom of page 20, under head "Benzosulphinidum" I read: "Caution. Since it is a powerful antiseptic, arresting the digestive process, it is not recommended, and should be used, if at all, with care." In the last edition of the United States Dispensatory, under the same head is the statement: "It is a very feeble antiseptic, but appears to have no action on gastric digestion." Such diametrically different statements need explanation.

HENRY B. HEMENWAY.

ANSWER.—Experiments on artificial digestion, undertaken by A. Stutzer and A. Stift for the agricultural and sugar industries in Germany during 1885-1889, reported in "Die Menschlichen Nahrungs und Genussmittel" by Dr. J. Koenig (1893) show that the presence of benzosulphinidum (saccharin) markedly interfered with the action of all the three classes of digestive ferments, especially the amylolytic, viz.: ptyalin and diastase, and the fat splitting ferment of the pancreas. Stift confirmed these results by experimenting on dogs and rabbits. Plugge's report that 3 parts in 10,000 of saccharin (about 2 grs. in 1 pint) would inhibit the action of the ptyalin, having been contradicted by Petschek and Zerner (1889), Salkowski showed that when saccharin was neutralized with ammonia or other alkali it did not impair the action of the salivary ferment.

The following quotations are submitted:

Dujardin-Beaumetz, in *Progrès Médical*: "The use of saccharin in aliments presents danger to the public health. Saccharin is not an aliment but a medicament." The committee of the Seine Council of Hygiene, Messrs. Polegot, Gautier, Jungfleisch, Proust and Riche expressed the same opinion at the same time.

Sollman, Text-Book of Pharmacology (1905), states: "Saccharin has the properties of the coal-tar group and is, therefore, antiseptic and irritant. It is sometimes given in fermentative dyspepsia (0.1 to 0.3 gms.). Its long-continued use interferes with to nephritis." Again: "This substancedigestion and may lead acts as a protoplasmic poison and restrains all ferments, especially the salivary and pancreatic, and probably the oxidations within the body. Large doses cause headache, depression, stupor, convulsions and nephritis. It is promptly and completely excreted unchanged.—Matthews and McGuigan." ("Influence of Saccharin on the Digestive Enzymes," JOURNAL A. M. A., Sept. 16, 1905, page 844).

Based on the first-named investigations, for the purpose of controlling or prohibiting the use of saccharin in alimentary substances, France, Italy and Portugal interdicted its importation, the academies of medicine of Madrid and Rio de Janeiro declared its addition an adulteration and its importation in Belgium became subject to a heavy duty.

That this coal-tar derivative should ever have been used as a sweetening agent in food for diabetic patients is incomprehensible since its derivation is sufficient to characterize it. Since the monopoly ceased with the expiration of the patent a number of years ago, competition has greatly reduced the price, as is customary with these chemicals "made in Germany," and but little effort is now made to exploit it as a "sweetener" in food products. Since dishes and menus sweetened with saccharin are yet offered diabetics, however, the fact that saccharin is harmful should be more widely recognized.

The statement in the Physicians' Manual that: "saccharin should be used if at all with care" is, therefore, believed to be correct, and, under the circumstances, conservative.

# The Public Service

## Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Jan. 11, 1908:

Raymond, H. I., surgeon, granted two months' leave, with permission to apply for another month.

Ford, J. H., asst.-surgeon, granted 30 days' leave of absence.

Shaw, H. G., asst.-surgeon, ordered to accompany 14th Infantry from Vancouver Barracks, Washington, to San Francisco, on completion of this duty granted 10 days' leave of absence.

Schreiner, E. R., asst.-surgeon, on arrival at San Francisco, Cal., will report in person to the commanding general, Department of California, for assignment to duty at the General Hospital, Presidio of San Francisco.

LaGarde, L. A., deputy surgeon-general, relieved from duty in the Philippines Division, and on arrival at San Francisco, to report to the Adjutant General of the Army for further orders.

Ashburn, P. M., asst.-surgeon, leave of absence extended one month.

Gunckel, G. I., dental surgeon, ordered to Fort Oglethorpe, Ga., for duty for four weeks.

Hussey, S. W., dental surgeon, left Fort Snelling, Minn., for duty at Fort Lincoln, N. D.

Coffey, A. McD., contract surgeon, relieved from duty at Vancouver Barracks, Wash., and ordered at the expiration of his present leave to duty at Fort Sam Houston, Texas.

Parkman, W. E., contract surgeon, ordered to Fort William Henry Harrison, Mont., for temporary duty.

Suggs, Frank, contract surgeon, left Fort Niagara, N. Y., on leave of absence for one month.

Hutson, T. O., contract surgeon, killed near Gordon, Ga., by falling from railroad train.

Halliday, C. H., contract surgeon, arrived at Fort Sam Houston, Texas, for duty.

Freeland, H. L., contract surgeon, returned to Fort Leavenworth, Kans., from leave of absence.

Whiteley, J. H., contract surgeon, relieved from duty at Fort Sheridan, Ill., and ordered to Fort De Soto, Fla., for duty.

Griffis, F. C., contract surgeon, relieved from further duty in the Philippines Division, and ordered at the expiration of his present leave of absence to Fort Sheridan, Ill., for duty.

## Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 11, 1908:

Jacobson, L. C., acting asst.-surgeon, appointed acting asst.-surgeon from Jan. 3, 1908.

Stokes, C. F., surgeon, detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to command the *Relief*.

Spear, R., surgeon, detached from the Navy Yard, League Island, Pa., and ordered to the *Relief*.

Baker, M. W., P. A. surgeon, when discharged from treatment at the Naval Hospital, New York, ordered home and granted sick leave for one month.

## Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 8, 1908:

Wasdin, Eugene, surgeon, granted seven days' extension leave of absence.

Williams, L. L., surgeon, directed to proceed to Crisfield, Md., for special temporary duty, on completion of which to rejoin his station at Baltimore.

Gardner, C. H., P. A. surgeon, leave of absence granted for 1 month from Dec. 6, 1907, revoked.

Sprague, E. K., P. A. surgeon, leave of absence granted for 7 days from Dec. 31, 1907, revoked.

Wickes, H. W., P. A. surgeon, detailed as member of Revenue-Cutter Service retiring board, New York, N. Y., Jan. 9, 1908.

Goldberger, Joseph, P. A. surgeon, directed to proceed to Reedy Island Quarantine Station for special temporary duty, on completion of which to rejoin his station at the Hygienic Laboratory.

Amesse, J. W., P. A. surgeon, temporarily relieved from Havana, Cuba, and directed to proceed to Washington, D. C., for assignment to temporary duty in the Hygienic Laboratory.

Ward, W. K., P. A. surgeon, granted leave of absence for 2 days from Dec. 30, 1907, under Paragraph 191, Service Regulations.

Herring, R. A., asst.-surgeon, granted leave of absence for 3 days from Dec. 29, 1907, under Paragraph 191, Service Regulations.

Scofield, R. B., asst.-surgeon, detailed as member of Revenue-Cutter Service retiring board, New York, N. Y., Jan. 9, 1908.

Krulish, Emil, asst.-surgeon, granted leave of absence for 3 days from Dec. 9, 1907, under Paragraph 191, Service Regulations.

Atiles, P. de, IV, acting asst.-surgeon, granted leave of absence for 30 days from Jan. 6, 1908.

Barnes, W., acting asst.-surgeon, granted leave of absence for 9 days from Jan. 1, 1908.

Frick, John, acting asst.-surgeon, granted leave of absence for 5 days from Jan. 1, 1908.

Light, S. D. W., acting asst.-surgeon, granted leave of absence for 8 days from Jan. 1, 1908.

Linley, W. J., acting asst.-surgeon, granted leave of absence for 30 days from Jan. 2, 1908.

Lyall, R., acting asst.-surgeon, granted leave of absence for 6 days from Dec. 23, 1907, under Paragraph 210, Service Regulations.

McConnell, E. F., acting asst.-surgeon, granted leave of absence for 13 days from Jan. 1, 1908.

Simonson, G. T., acting asst.-surgeon, granted leave of absence for two days from Jan. 14, 1908.

Thomas, J. N., acting asst.-surgeon, granted leave of absence for 26 days from Dec. 3, 1907, on account of sickness.

Thompson, W. R. P., acting asst.-surgeon, granted leave of absence for 9 days from Jan. 1, 1908.

Wetmore, W. O., acting asst.-surgeon, granted leave of absence for one day, Dec. 20, 1907, under Paragraph 210, Service Regulations.

Wilson, J. G., acting asst.-surgeon, granted leave of absence for one day, Dec. 17, 1907, on account of sickness.

BOARD CONVENED.

A board of medical officers was convened to meet at the Bureau in Washington, D. C., 10 o'clock a. m., Monday, Jan. 20, 1908, for the purpose of examining candidates for the position of assistant surgeon. Detail for the board: Surgeon D. A. Carmichael, chairman; P. A. Surgeon H. S. Mathewson, and P. A. Surgeon J. F. Anderson, recorder.

## Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Jan. 10, 1908:

SMALLPOX—UNITED STATES.

California: Berkeley, Dec. 14-21, 1 case.
District of Columbia: Washington, Dec. 14-28, 2 cases.
Illinois: Springfield, Dec. 19-26, 8 cases.
Indiana: Elkhart, Dec. 21-28, 3 cases.
Kansas: Galena, Dec. 21-28, 17 cases.
Louisiana: New Orleans, Dec. 21-28, 2 cases.
Minnesota: Winona, Dec. 21-28, 5 cases.
Missouri: St. Louis, Dec. 21-28, 7 cases.
New York: New York, Dec. 21-28, 2 cases.
South Dakota: Sioux Falls, Dec. 21-28, 1 case.
Tennessee: Knoxville, Dec. 21-28, 1 case; Nashville, 13 cases.
Washington: Spokane, Dec. 14-21, 2 cases, 1 death.

SMALLPOX—FOREIGN.

Argentina: Rosario, Oct. 1-31, 1 death.
Brazil: Para, Dec. 14-21, 16 cases, 11 deaths; Rio de Janeiro, Nov. 24-Dec. 8, 31 cases, 14 deaths.
Canada: Winnipeg, Dec. 21-28, 1 case.
Cape Colony: Cape Town, Nov. 16-23, 1 case.
China: Hongkong, Oct. 26-Nov. 16, 1 case, 1 death.
France: Paris, Dec. 7-14, 9 cases.
India: Bombay, Dec. 3-10, 2 deaths; Madras, Nov. 8-Dec. 6, 2 deaths.
Italy: General, Dec. 5-12, 143 cases.
Japan: Kobe, Nov. 23-Dec. 7, 66 cases, 20 deaths; Yokohama, Nov. 2-9, 1 case.
Java: Batavia, Nov. 8-23, 3 cases.
Malta: Dec. 5-12, 1 case.
Mexico: Aguas Calientes, Dec. 15-29, 6 deaths; Mexico City, Nov. 16-30, 2 deaths.
Peru: Lima, Dec. 4, 32 cases.
Portugal: Lisbon, Dec. 17-21, 7 cases.
Russia: Moscow, Nov. 30-Dec. 14, 19 cases, 3 deaths; Odessa, Nov. 30-Dec. 7, 2 cases; Riga, Nov. 30-Dec. 14, 5 cases; St. Petersburg, Nov. 30-Dec. 7, 30 deaths.
Spain: Valencia, Dec. 8-15, 36 cases, 3 deaths.
Turkey: Constantinople, Nov. 24-Dec. 15, 5 deaths.
Venezuela: Caracas, Dec. 30, present.

YELLOW FEVER.

Brazil: Manaos, Nov. 23-Dec. 14, 9 deaths; Para, Dec. 7-21, 23 cases, 14 deaths.
Cuba: Cienfuegos, Jan. 4, 1 death; Santa Clara, Jan. 6, 1 case.
Guatemala: Chiquimula, December, present; Zacapa, December, present.
West Indies: Trinidad, Jan. 6, 1 death.

CHOLERA.

China: Hongkong, Oct. 28-Nov. 16, 3 cases, 7 deaths.
India: Bombay, Dec. 3-10, 1 death; Madras, Nov. 16-Dec. 6, 11 deaths.
Japan: Kobe, Nov. 23-Dec. 7, 7 cases, 3 deaths; Yokohama, Nov. 2-9, 4 cases, 3 deaths.
Russia: General, Nov. 13-19, 202 cases, 115 deaths; Kief, Nov. 24-Dec. 7, 24 cases, 4 deaths.

PLAGUE.

Brazil: Rio de Janeiro, Nov. 4-Dec. 8, 17 cases, 5 deaths.
China: Hongkong, Oct. 26-Nov. 16, 3 cases, 3 deaths.
Egypt: Alexandria, Nov. 28-Dec. 8, 3 cases, 1 death; Provinces: Oskalieh, Dec. 4-11, 1 case, 1 death; Garbieh, Dec. 4-5, 3 cases, 2 deaths.
India: Bombay, Dec. 4-10, 5 deaths; Rangoon, Nov. 8-24, 12 deaths.
Japan: Osaka, Nov. 23-30, 70 cases, 62 deaths.
Peru: Lima, Nov. 29-Dec. 4, 4 cases, 2 deaths; Chesica, 1 case; Matucana, 2 cases; Trujillo, 9 cases, 6 deaths; Paita, 10 cases, 7 deaths; Piura, 4 cases, 2 deaths.
Straits Settlements: Singapore, Nov. 8-16, 2 deaths.

## Marriages

LEE HUNT, M.D., Anderson, Ind., to Miss Martha Carr of Orford, N. H., recently.

ARTHUR R. SHOLARS, M.D., to Miss Fanny Baker, both of Orange, Texas, December 27.

EUGENE ST. CLAIR BEADLES, M.D., to Miss E. Baker, both of Berkeley, Cal., December 25.

PERCY J. FARMER, M.D., Romeiro, N. M., to Miss Mabel Sanders of St. Louis, January 1.

CHARLES A. CLARK, M.D., Onawa, Iowa, to Miss Grace Fagen of Des Moines, Iowa, January 1.

BAYARD T. CRANE, M.D., Baltimore, to Miss Kathleen Miller, at Worcester, Mass., December 25.

E. W. JONES, M.D., Mt. Vernon, S. D., to Miss Laura Page of Correctionville, Iowa, January 1.

M. T. DALTON, M.D., Sumas, Wash., to Miss Ella M. Reliberger, at Baltimore, December 31.

NELSON CASE MORROW, M.D., Altamont, Kan., to Miss Grace Todd of Manchester, Iowa, January 1.

JOSEPH F. MESSENBAUGH, M.D., to Miss Laura Whisler, both of Oklahoma City, Okla., December 24.

CHRISTIAN FREDERICK GRIMMER, M.D., to Miss Louise M. Warner, both of Pekin, Ill., December 31.

WILLIAM FRANCIS WAKEFIELD, M.D., San Francisco, to Miss Mary Stadler of Oakland, Cal., January 1.

JOHN ANDRE FULLER, M.D., Uehling, Neb., to Miss Clara Mabel Davenport of Omaha, December 24.

FRANK P. BAYLISS, M.D., Whitesboro, N. Y., to Miss Eva M. Wheatley of Syracuse, N. Y., December 28.

DE FORREST C. WALTERS, M.D., McKeesport, Pa., to Miss Jane Moore of Saginaw, Mich., December 25.

WALTER ROBERT PARKER, M.D., Detroit, Mich., to Miss Margaret F. Watson of Evanston, December 28.

CLARENCE KLUTTZ, M.D., El Paso, Texas, to Miss Josephine Branch Craige of Salisbury, N. C., December 18.

EMIL WINDMUELLER, M.D., Woodstock, Ill., to Miss Helen Howden Armstrong of Kenosha, Wis., December 28.

BENNETT W. DEWAR, M.D., Cooperstown, N. Y., to Miss Fanny L. Stringham of Unadilla, N. Y., December 30.

JUSTIN EDWARD HAYES, M.D., Chesterfield, Mass., to Miss Josephine Eileen Canavan of Holyoke, Mass., January 2.

R. LEE MALONEY, M.D., Anacortes, Wash., to Miss Maude von Kleinsmid of Chicago, at Corvallis, Ore., December 25.

ALBERT L. LAING, M.D., Rapid River, Mich., to Miss Mildred McLean of Rudyard, Mich., at Gladstone, Mich., January 3.

## Deaths

**Thomas H. Craven** (Years of Practice. Colo., 1881); a veteran of the Civil War; for more than 20 years local surgeon at Canon City, Colo., for the Denver & Rio Grande Railroad; a member of the Colorado and Fremont County medical societies and of the National Association of Railway Surgeons; for two years mayor of Canon City; for more than four years a member of the city council, and for five years treasurer of Fremont County; died at his home in Canon City, January 2, from cerebral hemorrhage, aged 70.

**Edward J. Brobst, M.D.** Pennsylvania Medical College, Gettysburg, 1853; surgeon of the One Hundred and Forty-third Pennsylvania Volunteer Infantry during the Civil War; a member of the Medical Society of the State of Pennsylvania and Berks County Medical Society; for more than half a century a practitioner of Berks County; died at his home in West Leesport, December 31, from cerebral hemorrhage, after an illness of ten days, aged 74.

**Charles Henry Taylor, M.D.** Rush Medical College, Chicago, 1903; a member of the American Medical Association, and one of the best known younger practitioners of South Bend, Ind.; formerly superintendent of La Grange (Ind.) high school and a member of the faculty of the State Normal School of Wisconsin; died in St. Joseph's Hospital, in South Bend, January 8, from pneumonia, after an illness of five days, aged 38.

**William H. Wagner, M.D.** Pennsylvania Medical College, Gettysburg, 1853; a member of the American Medical Association; president of the board of trustees of the Emergency Hospital of Frederick County; at one time president of the Frederick Medical Society; president of the Woodsboro (Md.) bank; for 45 years a practitioner of that city; died suddenly from heart disease, at his home, December 28, aged 77.

**J. Adelphi Gottlieb, M.D.** National University, Medical Department, Washington, D. C., 1891; a member of the American Medical Association, American Public Health Association, and American Association for the Advancement of Science; a member of the staff of Chambers Street Hospital and Bellevue Hospital, New York City, and a professor in the Medicolegal Institute, New York City; died December 28, aged 37.

**Joseph Ryers Waln, M.D.** Jefferson Medical College, Philadelphia, 1884; a member of the Illinois State and Peoria County medical societies; a prominent specialist on diseases of the eye, ear and throat, of Peoria; for two years first assistant in that specialty at the Medico-Chirurgical Hospital, Philadelphia; died suddenly in Davenport, Iowa, from angina pectoris, December 29, aged 49.

**Philip John Strathy, M.D.** Toronto University, 1883; M.C.P. and S. Ontario, 1894; M.R.C.S. England, 1883; a member of the Toronto Clinical Society, and at one time a demonstrator of anatomy in the Trinity Medical College, Toronto; a member of the staff of the Toronto General and Grace hospitals; died suddenly from heart disease at his home in Toronto, January 2, aged 44.

**Parks L. Kabler, M.D.** Missouri Medical College, St. Louis, 1879; a member of the Missouri State Medical Association and Marion County Medical Society, and for many years local surgeon of the Burlington System, and secretary of the district board of pension examiners; died at his home in Hannibal, Mo., December 28, from tuberculosis, after a prolonged illness, aged 54.

**Louis R. Pierce, M.D.** Long Island College Hospital, Brooklyn, 1889; a member of the American Medical Association and the New York Academy of Medicine; obstetrician and assistant physician to St. Luke's Hospital, Newburgh, N. Y.; died at his home in that city, December 29, from pneumonia, after an illness of two weeks, aged 41.

**William H. Giddings, M.D.** University of Vermont, College of Medicine, Burlington, 1866; for several years superintendent of the State Hospital for the Insane, Waterbury, Vt.; a member of the legislature in 1880, and senator from Franklin County in 1888; died suddenly at his home in Bakersfield, January 2, from heart disease, aged 67.

**John Perry Gale, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1887; a member of the Association of Southern Pacific Railway Surgeons, and district surgeon to the Southern Pacific Railway at Arbuckle, Cal., for several years; died suddenly at his home in Berkeley, Cal., January 3, aged 55.

**Julian W. Jenkins, M.D.** Beaumont Hospital Medical College, St. Louis, Mo., 1888; division surgeon of the St. Louis, Iron Mountain & Southern division of the Missouri Pacific Railway at Little Rock, Ark.; died at his home, November 17, after an illness of more than a year, from cerebral hemorrhage, aged 63.

**John M. Waters, M.D.** Jefferson Medical College, Philadelphia, 1868; a pioneer physician of Bozeman, Mont.; a member of the Montana State Medical Association and Gallatin County Medical Society; died at his home in that city, November 27, from nephritis, after an illness of six months, aged 68.

**Joseph Julius Oppenheim, M.D.** Northwestern University Medical School, Chicago, 1907; of Chicago; an interne in Cook County Hospital; while delirious from typhoid fever, jumped through a third-story window at the Presbyterian Hospital, December 31, and died from his injuries, January 4, aged 23.

**John K. Smalley, M.D.** Medical College of Indiana, Indianapolis, 1882; Jefferson Medical College, Philadelphia, 1887; at one time a member of the county board of pension examining surgeons; president of the First National Bank of Hartsville, Ind.; died at his home recently, and was buried January 3, aged 58.

**Ferdinand Gordon Morrill, M.D.** Medical School of Harvard University, Boston, 1869; a member of the Massachusetts Medical and Suffolk District medical societies; prominently connected with the Children's Hospital, Boston; died suddenly at his winter home in Assouan, Egypt, December 27, aged 63.

**John R. Briggs, M.D.** Missouri Medical College, St. Louis, 1880; a member of the American Anti-Tuberculosis League; for two terms a member of the city council of Dallas; died at his home in the Briggs Sanitarium, Dallas, Texas, from nephritis, after an illness of several months, aged 56.

**Mareen D. Humes, M.D.** University of Virginia, Department of Medicine, Charlottesville, 1873; resident physician at Bay View Hospital, Baltimore, in 1873 and 1874, and thereafter a practitioner of Baltimore and Upper Marlboro, Md.; died at his home in the latter city, December 24, aged 56.

**Charles A. Geiger, M.D.** Hahnemann Medical College and Hospital, Philadelphia, 1857; of Beaufort, S. C., while temporarily insane from loss of money in stock speculation, shot and killed a New York broker, December 20, and afterward killed himself, in New York City, aged 45.

**Edward Homer Gee, M.D.** Rush Medical College, Chicago, 1889; a member of the Ohio State Medical Association and Muskingum County Medical Society; while making a professional call near Zanesville, January 6, was struck by a freight train and instantly killed, aged 38.

**David Hale Gregory, M.D.** Western Homeopathic Medical College, Cleveland, 1859; of Newark, Ohio; surgeon of the One Hundred and Thirty-fifth Volunteer Infantry during the Civil War; died suddenly from heart disease, December 31, while sitting in his buggy, aged 71.

**John J. L. Boice, M.D.** Detroit (Mich.) Medical College, 1880; a member of the American Medical Association; a member of the faculty of Gross Medical College, Denver, for several years, died at his home in Denver, from influenza, December 28, after an illness of ten days, aged 67.

**Frederick Swartz Kohler, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1860; surgeon of the Twenty-first Pennsylvania Volunteer Cavalry during the Civil War; died at his home in Nampa, Idaho, January 1, from senile debility, aged 71.

**John C. Graham, M.D.** Starling Medical College, Columbus, 1889; lecturer on bacteriology in Starling Medical College from 1893 to 1894, and lecturer on histology in Denver Medical College from 1896 to 1898; died at his home in Denver, December 25, aged 44.

**Thomas W. Nichols, M.D.** Shelby Medical College, Nashville, Tenn., 1859; surgeon in the Confederate service during the Civil War; died at his home in Erin, Tenn., December 31, from pneumonia, several weeks after a fracture of the hip, aged 72.

**Thomas E. Williams, M.D.** George Washington University, Department of Medicine, Washington, D. C., 1859; a surgeon in the Confederate service during the Civil War; was burned to death at his home in Peake's Turnout, Va., December 31, aged 72.

**Charles Smith, M.D.** Jefferson Medical College, Philadelphia, 1853; a surgeon in the Confederate service during the Civil War; from 1892 to 1900 a member of the state legislature; died suddenly at his home in Frankton, Va., December 30, aged 73.

**Clarence Eugene Stroud, M.D.** Detroit Homeopathic Medical College, 1872; of Sandusky, Ohio; died at a hospital in that city, January 2, as the result of injuries to the skull, received three weeks before by the explosion of a vulcanizer, aged 61.

**Benjamin Franklin Arrington, M.D.** Transylvania University, Medical Department, Lexington, Ky., 1848; died at his home in Goldsboro, Tenn., October 29, from jaundice with heart complications, after an illness of eight weeks, aged 80.

**Robert Carr Block, M.D.** Hahnemann Medical College and Hospital of Chicago, 1893; of Ferguson, Mo.; died at a sanatorium in Jacksonville, Ill., January 5, from locomotor ataxia, after an illness of two years, aged 46.

**Alva Albert Hoag, M.D.** New York Homeopathic Medical College and Hospital, New York City, 1888; died from pneumonia at his home in Bridegport, Conn., December 30, after an illness of one week, aged 48.

**J. W. Gray, M.D.** University of Louisville, Medical Department, 1844; for 55 years a practitioner of Marshall County, Miss.; died at the home of his daughter in Holly Springs, December 28, aged 84.

**Samuel Levin, M.D.** Cornell University Medical College, New York City, 1906; died in the Presbyterian Hospital, New York City, July 19, from acute cholangitis, after an illness of sixteen days, aged 34.

**John S. Cron, M.D.** Hahnemann Medical College and Hospital of Chicago, 1884; health officer of Gladbrook, Iowa; died in Roswell, N. M., from tuberculosis, January 1, after a long illness, aged 51.

**Harlan H. Pillsbury, M.D.** Medical School of Harvard University, Boston, 1859; formerly of Auburn, Cal.; died at the home of his son in Hollywood, Los Angeles, December 26, aged 76.

**Eugene St. Clair Beadles, M.D.** Louisville (Ky.) Medical College, 1886; of San Diego, Cal.; a member of the American Medical Association; died at Berkeley, Cal., December 27, aged 41.

**John Chris Wessels, M.D.** Western Pennsylvania Medical College, Pittsburg, 1905; died at his home in Allegheny, December 27, from pneumonia, after an illness of a few days, aged 26.

**John C. Miller, M.D.** Bellevue Hospital Medical College, New York City, 1865; of Nicholasville, Ky.; died January 4, in Umadilla, Fla., where he had gone for his health, aged 66.

**W. A. Moore, M.D.** Medical College of Georgia, Augusta, 1861; of Milledgeville, Ga.; surgeon in the Confederate service during the Civil War; died at Sharon, Ga., December 28.

**A. Smith Carr, M.D.** Jefferson Medical College, Philadelphia, 1879; died at his home in Clarksburg, W. Va., December 21, from locomotor ataxia, after a prolonged illness, aged 51.

**Arthur E. Gresham, M.D.** Cooper Medical College, San Francisco, 1885; died at his home in Long Beach, Cal., December 30, from pneumonia, after an illness of five days, agd 42.

**James Wells Moliere, M.D.** Detroit Homeopathic Medical College, 1874; of San Francisco; died from pneumonia, December 27, at the home of his sister in Oakland, Cal., aged 81.

**James Mitchell, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1883; of Lancaster, Pa.; died at the Westmoreland Hospital, January 6, aged 48.

**John C. Mason, M.D.** Medical College of Ohio, Medical Department, University of Cincinnati, 1878; of Prairieton, Ind.; died in Ravenswood, December 23, aged 59.

**Edward D. Messinger, M.D.** Bennett College of Eclectic Medicine and Surgery, Chicago, 1887; a veteran of the Civil War; died at his home in Chicago, January 8.

**John D. Scott, M.D.** Washington University School of Medicine, Baltimore, 1868; of Roanoke, Va., was found dead in his office in that city, January 4, aged 79.

**Herman V. Nichols, M.D.** Kansas City (Mo.) Medical College, 1898; formerly of Liberal, Kan.; died in Fairbanks, Alaska, November 3, aged 56.

**Albert P. Hesterly, M.D.** Barnes Medical College, St. Louis, 1902; died suddenly at his home in Gurton, Ark., December 29, from pneumonia, aged 34.

**M. J. C. Naftel, M.D.** Toronto University, 1905; of Toronto; died at Goderich, Ont., December 13, from typhoid fever, aged 29.

**F. J. C. Walker, M.D.** Missouri Medical College, St. Louis, 1861; died at his home in Cretcher, Mo., January 1, aged 81.

# Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

### A Sample District Program in Utah.

The Third Councilor District Society, Utah, publishes a bulletin, which goes to all members. Under the leadership of the councilor, Dr. Frederick Clift, of Provo, the society has taken up the work of securing the cooperation of the public through meetings for the discussion of sanitary subjects. The program for the second semi-annual meeting of the district society includes an address on "The Physician in Politics," by Dr. Edward M. Conroy, mayor of Ogden; an address by Gov. John C. Cutler, and a visit to the State Mental Hospital at Provo, and a special program on school hygiene were arranged for this meeting, taking up the problems of tuberculosis in schools, gymnasium training, instruction in hygiene, medical examination of school children, and the lighting and ventilation of school buildings. Besides members of the society, place is given on the program to the president of Brigham Young University, to judges of the juvenile courts of Salt Lake City and Provo, to county and state superintendents of schools, as well as to architects and business men. In connection with this meeting there was arranged a convention of state school teachers, in connection with which it was planned to interest many of those present in the work of the district society.

### Progress in Ohio.

The Mahoning County (Ohio) Medical Society celebrated its twenty-fifth anniversary recently with a banquet, which was attended by over 200 members. Dr. John MacCurdy, the oldest member present, responded to a toast in which he discussed medical organization. According to newspaper reports, he said that, previous to the reorganization movement, the medical profession was held together by a rope of sand and that the county organizations were then without any great value or service to the profession. The state society in Ohio, as shown by the old volumes of transactions, had 572 members in 1870 and 627 members in 1880, an increase of 55 in ten years. To-day the Ohio State Medical Association has nearly 4,000 members in good standing. Dr. MacCurdy also congratulated the present-day organization on the superior ability to transact business as compared with the "committee of the whole, go as you please" method. He also congratulated the state association on having established a state journal, which he regarded as the longest step forward which had been taken.

### Society Bulletins.

The Washington County (Pa.) Medical Society issued on January 1, the first number of the *Medical Program* of the Washington County Medical Society, which is hereafter to be published bimonthly. This bulletin is a neat leaflet containing society announcements, names of new members, extracts from various journals, etc. This enterprise is highly commendable; medical societies are learning that bulletins and journals sent regularly to members are of the greatest value in promoting good work.

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The Howell County (Missouri) Medical Society and the Hamilton County (Ohio) Medical Society (Cincinnati Academy of Medicine) have adopted the nostrum resolutions promulgated by the Kentucky State Medical Association.

## POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

### Fourth Month.

### FOURTH WEEKLY MEETING.

**Pleurisy.**

*Varieties.*

Acute and Chronic. Acute plastic, sero-fibrinous, purulent, tuberculous, hemorrhagic. Chronic with effusion, chronic adhesive.

*Etiology.*

Acute Plastic: Primary—Age, sex, cold, injury, diathesis. Secondary—Acute and chronic inflammations of lungs, pneumonias, tuberculosis, acute rheumatism, nephritis, hepatitis, alcoholism, by extension through lymphatics.

Sero-fibrinous: After acute plastic, tuberculosis, primarily and secondarily, infectious diseases.

Purulent: Secondary to sero-fibrinous, after infectious diseases, malignancy, tuberculosis, through lymphatics, injuries, in children.

Hemorrhagic: Tuberculosis, carcinoma, chronic nephritis, hepatic cirrhosis, malignant infections.

Chronic with Effusion: After acute variety.

Chronic Adhesive: After sero-fibrinous, idiopathic.

*Pathology.*

Acute Plastic: Extent of lesion, surface, blood vessels, exudate, adhesions, terminations.

Sero-fibrinous: Extent of, involvement, fibrinous exudate, character and amount, serous exudate, physical, chemical and microscopic characters, location of exudate, changes in pleuræ.

Coincident pathology, mediastinum, lungs, heart, abdominal viscera.

Purulent: Character of exudate, pleuræ, microscopic and gross changes.

Hemorrhagic: Physical and microscopic character of exudate, changes in pleuræ.

**Emphysema.**

Compensatory Emphysema: Usual causes. Manner of its production.

Hypertrophic Emphysema: Etiology. Theories as to causation. Bearing of heredity.

Pathologic Anatomy: Changes in air cells, in bronchi.

Symptoms: Characteristic symptoms. Physical signs.

**Gangrene of Lung.**

Etiology: Most prominent causative factors. Pathologic anatomy. Mechanism of production. Pathologic changes. Symptoms. General symptoms. Diagnostic symptoms. Course and termination.

**Abscess of Lung.**

Etiology: Local conditions. Manner of production in pyemia.

# Society Proceedings

## COMING MEETING.

Med. Society of the State of New York, Albany, Jan. 28.

## AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

*Public Health Discussion in Section I, Jan. 2, 1908.*

### Federal Regulation of Public Health.

In connection with the annual meeting of the American Association for the Advancement of Science, held in Chicago, December 31 and January 1, there was a discussion Jan. 2, 1908, on "Federal Regulation of Public Health," a number of physicians and laymen who were not members being present by invitation and taking part.

The chairman, in calling the section to order, said that this is a medical, economic, civic, sociologic, and comprehensive international problem, in which Americans are asked to do their part. The catholicity of the movement is one means by which a more perfect type of individual manhood, womanhood and childhood can be brought about in our national life.

DR. WILLIAM H. WELCH, president of the association, said that he knew of nothing that is more significant and more hopeful for the promotion of the interest of public health than a gathering of this kind under the auspices of this association. The significance lies in the fact that the movement is no longer confined to medical men and professed sanitarians or hygienists, but it has become a great civic movement. The other class of experts who have interested themselves in this subject next to medical men and sanitarians are the economists and sociologists. It is most significant because approaching the same problem from a different point of view from that of the physician, they have come to the same conclusion as to the predominant importance of public health to the welfare of the community, as well as its industrial, commercial, physical, social, moral, political importance. There is no force in the community, educational, political or social, which is not concerned with the great problems which are to be discussed.

Numberless efforts have been made to secure a department of public health, those efforts originating always on the part of physicians who have received little or no attention from those who have had the power of instituting such a department. Doctors, individually and in committees, have made their appearance before the committees of the Senate and House, but deaf ears were turned to their appeals. When one states that public health is essential to the welfare of the community there is, of course, no dissenting voice, but it can not be that those who have the authority to institute measures to check this preventable waste have no realizing sense of what it signifies. The state does not do its duty in the matter, because, possibly, it does not often know what its duty is. When they are told that the death rate can probably be cut in two if adequate measures, which are well within the possibilities of realization, are inaugurated, it does not seem to make any definite impression on their minds. They have got to be informed in detail as to exactly how these proposed measures are to accomplish this desired result, and if they are so informed, can we doubt for a moment that the appeal will be heard? The waste is incalculable, which results from the prevalence of diseases which we know can be prevented. The measures which should be adopted to prevent this waste are based on a knowledge of the origin and mode of spread of preventable diseases. That knowledge is, to a very considerable extent, of recent origin, but the movement to protect the health of the public is by no means of recent origin. Possibly the greatest single incentive to stir up the mind of the public to do something in this direction has been the outbreak of some strange, unusual devastating pestilence.

The beginning of public health reform in England can be traced to the outbreak of Asiatic cholera, about the year 1830. Nothing since the days of black death had aroused such fears and terrors in the minds of the public as the appearance of this disease, previously unknown in Western Europe. There were other causes at work, great ills resulting from the large industrial developments, and factories and conditions of the poor were operative. All of them were important factors. But it was, above all, the appearance of Asiatic cholera which started the movement in England. While Great Britain possibly has not contributed most of our knowledge to the origin and spread of infectious diseases, it has been the country most interested and most effective in applying that knowledge. It was conceded that most of the prevailing epidemic diseases were the result of contaminations of water, soil, air, due to filth. They were spoken of as filth diseases, and, on the whole, that was probably the most fertile idea. It led to a general cleaning up of habitations and surroundings. It led to the introduction of public water supplies, the establishment of suitable systems of sewerage and drainage. But it is to be regretted that they allowed so much of the filth to escape into running streams at that time, and that they did not earlier see that this was a source of great danger.

Possibly the greatest single triumph in the direction of reform was the extermination of that disease which is most directly traceable to filth—typhus fever. We can hardly realize at this time the extent and mortality of typhus fever in those days. The real knowledge on which modern sanitation is based as to the prevention of infectious diseases came from the discovery of the causes of these diseases by such men as Pasteur and Koch.

Professor Welch emphasized the point that the governments of France and Germany were actively concerned in the promotion of the investigations which led to the great transformation in the facts of modern medicine. Pasteur was called from his work by the government of France to investigate such matters as the rescue of the silk-worm industry and the other industrial diseases. After Koch had made his great research on anthrax, which led to discoveries which we now recognize as the starting point of the great science of modern bacteriology, he was summoned from a very obscure position by the national government to Berlin to take charge of the first laboratory for the study of infectious diseases in the newly formed Imperial Health Office in Berlin. The governments of France and Germany laid the foundation, and the discoveries which led quickly to the finding of the organisms which cause Asiatic cholera, tuberculosis, typhoid fever and diphtheria have been influential in arousing public sentiment in this matter. Preventive medicine and public hygiene are based now on a large mass of ascertained facts which can be applied in the most direct and effective manner toward the prevention of these diseases and to the improvement of public health.

One of the most important and interesting outcomes is the measures that have been adopted for the prevention of most of these diseases, increasing the material prosperity and commercial development of the country. Take, as an illustration, the measures necessary for the eradication of malaria. The most effective measures are to drain lands, to drain the swamps and destroy the breeding places of the mosquito. That in itself, quite apart from the prevention of malaria and the destruction of the mosquito, leads to great enrichment of the material resources of the country. Take the measures essential for checking the spread of tuberculosis. This disease is now an economic and social problem, as well as medical. Everything that pertains to the improvement of the living conditions of the individual bears on the great problem of the eradication of tuberculosis; better houses for the poor; better ventilation; public parks, playgrounds, everything of that kind which relates to and is essential to the improvement of the material conditions of the community, particularly of that class who are most in need of such improvement. We have ascertained the nature of the micro-organisms causing a number of infectious diseases, and even where the particular micro-organism has not been discovered, we can by analogy, from what is previously known concerning the infectious diseases, draw inferences as to the mode of spread of the other infectious diseases.

To what extent is this new knowledge applied in public hygiene and preventive medicine? Only to a limited extent anywhere in the world. Any one who is familiar with what is actually known to-day regarding this class of diseases, is aware of the fact that even in the most enlightened countries there is not more than a fraction of that knowledge applied. It is here, as is so often the case, that knowledge outstrips application.

But in Germany, and particularly in France and England, so much of this knowledge has been applied that the results are very apparent. The death rate has been reduced two-thirds, in many places to one-half, of the mortality which prevailed at that time, and it is mostly in the direction of checking the spread of the infectious diseases.

In America this new knowledge is applied to a lamentably small extent. We are a reproach to the civilized world, by our inattention to matters of public health and the prevention of disease. Can we conceive of our national government, if a Koch or a Pasteur should make his appearance in this country, calling him to Washington, giving him a laboratory and opportunities to confer inestimable benefits on mankind? Incredible! Under existing conditions our government would do nothing of the kind. Into whose hands has been placed hitherto the application of this knowledge in the administration of matters of public health? It has been in the hands, where it should be to a large extent, of the towns and cities of the state, but only to a small extent has that knowledge been applied in a systematic and intelligent way. The reason is because there is no national co-ordination, no national head in this matter to indicate in what direction money, which has been so wastefully applied in many instances, can be applied most effectively. In England every little town and city has a trained expert in matters of sanitation, one who has a diploma of doctor of public health, indicating that he has a knowledge beyond that of the average physician.

Dr. Welch said that this meeting is being held under the auspices not only of the Committee of One Hundred, but of the American Health League, a great civic organization, which is spreading over this country with incredible rapidity, stirring up interest on the part of the public and pointing out how absolutely essential it is to get adequate reform. It is also held under the auspices of the legislative committee of the American Public Health Association, the American Medical Association, and other great organizations.

Is it not true, he asked, that the health of the people is of as much importance as the health of animals? Consider the millions of dollars the national government spends for the health of animals. If a tithe of what, for instance, is expended in efforts to control hog cholera, pleuro-pneumonia and other diseases of animals, is spent for improving the health of the nation, we should not stand where we are and be a by-word for the nations of the world in consequence of our ignorance and indifference in this matter. We have precedent enough in the direction of the control of animal diseases to justify making the strongest possible appeal for the government to do something for the control of human diseases.

What can it do? Numberless things. It is not so much the merely executive administrative part of the work which interests those who are engaged in this movement; it is the educational, the cooperative side of the work. Just think of what can be done in the way of collection of vital statistics. It is difficult to make the public understand how vital statistics lie at the basis of it all, just as an intelligent system of bookkeeping does in any business. We must know the incidents of disease, what its death rate is, before we can intervene with any intelligence. Only a very limited part of this country has what may be called technically a registration area. In other words, there are few cities, very few communities, that know anything intelligently and exactly about the health conditions in their respective localities. There are many ways in which our government can prove of great efficiency in this co-ordinating, educational and harmonizing work in the interests of public health. There is no system of economy, apparently, at Washington, and the opportunities are probably greater to-day than ever toward doing something for the promotion of the welfare of the people of this country by the co-ordination of the forces which already exist there, but back of it must be an educated, intelligent, public sentiment. Under our form of government educated sentiment can be secured by the support of this civic, medical and sanitary movement.

JUDGE GEORGE L. SHIRAS, Washington, D. C., said that the United States Public Health and Marine-Hospital Service is regarded as the nucleus of the movement looking toward the creation of a centralized bureau of public health. The present bureau is under the Treasury Department, and under the supervision of the Secretary of the Treasury, whose training and duties ordinarily do not bring him into close contact or sympathy with work of this character. It is recognized that medical and sanitary research is the first duty of such a bureau, and that its most active function finds expression in interstate and international quarantine regulations, whereby the conditions which result in the transmission of epidemics from one nation to another or from state to state, can be brought under federal control. At present the federal quarantine for Porto Rico, for instance, belongs to a bureau of public health; in Cuba the War Department is supreme; in the Panama Zone the canal commissioners prescribe all quarantine regulations, and the Navy Department prescribes its quarantine regulations. This ought not to be the case, as the more dangerous forms of epidemic diseases, which always come from foreign countries, such as cholera, yellow fever, and the plague, can not be controlled effectively when there are four distinct bureaus or departments that have these matters in charge.

Reference was made to a bill which will be introduced in Congress, creating a standing committee on public health, composed of broad-minded men, who will cooperate in the most effective manner with the federal authorities and citizens at large in all measures to improve the health conditions of the country. The President of the United States, under the existing laws, should by executive orders transfer and consolidate the many divisions and bureaus scattered at present through the various departments of the government. When this is done, laws will have to be passed which will still further extend the jurisdiction of the central bureau of health and providing it liberally with means to carry on its many and varied functions.

DR. J. N. MCCORMACK, Kentucky, has been surprised at the existence of the widespread interest of the people in this movement. He has insisted in every community in which he has spoken that to merely arouse public sentiment, to appear before state legislatures or municipal councils, and begin agitation for local, state or national reforms would accomplish little, unless there is established in each community in each state a permanent office in charge of trained men, where facts may be gathered, and where the existing medical knowledge may be collected and presented to teachers, to leaders of public thought in civic, political and other organizations. To secure this, a campaign of education is needed. He thinks the time has gone by when men should be sent to represent the people in our legislatures or in Congress, who are not informed on these great questions. It is no longer the medical men who are interested in this great movement, but the lay people, the leaders of public opinion, the press, the teachers, the great university leaders, should be induced to take up this work and to see that in the political primaries men who do not possess the intelligence to comprehend this movement are antagonized on the ground that human life and human health are far more important to people than the question of who shall be President of the United States, or what political party shall predominate. Partisan politics has no place in municipal health affairs, and it should occupy a far more subordinate place in state and national affairs than heretofore has been the case. The teachers, the newspapers, the great lay leaders of public opinion, should endeavor to create a public sentiment in this country which will make it impossible for a man to secure the support of intelligent people unless he comprehends and makes as one of the planks of his platform, as Gladstone and Disraeli and other great European leaders did, the care of the public health the first and most important duty of a statesman. He believes that by co-ordination of interests, both medical and lay, there is promise of the dawn of a new day for the promotion of this great movement.

DR. F. F. WESBROOK, Minnesota, referred to the importance of promulgating accurate information concerning the cause and prevention of disease. He does not think America is behind other nations as regards the prompt application of new facts that are of importance, but we have no governmental recognition. From a governmental standpoint, we are behind Germany in the prevention of tuberculosis. Suitable bulletins are issued by the Bureau of Animal Industry and by other departments of state concerning the stock industry; how to protect

cattle from disease; how to improve the live stock of the country; how to improve the wheat-raising industries, dairy products, etc. This is done by federal teaching and by federal publications, in combination with the state experiment stations throughout the country; but of publications which relate to the economic importance and protection of human life, there are very few, if any. The Committee of One Hundred has begun to place before the public the latest information bearing on sanitary problems, the protection of human life, the way disease is spread, etc.

Sanitation to-day is a profession. No ordinary medical practitioner knows all about sanitation. To-day it is necessary to have trained engineers, who know the cost of material, so that foolish expenditures may not be recommended. It is necessary to have people who know something about geology and botany; also to have mathematicians and statisticians. We must have trained social workers, and physicians to make early and accurate diagnoses. Furthermore, we must have the necessary laws and regulations, all of these things being matters of proper federal legislation. In his judgment, it is just as important to have a proper federal department to protect the people against invisible foes, like bacteria and protozoa and their harmful effects, as it is to have a department of war to protect us against human enemies.

DR. EDWARD T. DEVINE, secretary of Associated Charities, New York City, said that what we need to-day in this country is to create a conception of physical well-being which can be applied to the child throughout its school-days and college life, and that can stay with a man, to his advantage, through the whole of his life. Cleanliness and personal habits are more important in lowering the death rate than anything the medical profession, in its strictly professional capacity, can possibly do. He heartily favored the federal regulation of public health matters.

PROF. IRVING FISHER, Yale University, said the Committee of One Hundred was launched a year ago through a paper read by Professor Norton. He outlined the work that is being done by this committee. The subcommittees of this Committee of One Hundred are: A committee on finance; committee on legislation; committee on newspaper publicity; committee on magazine publicity; committee on research. The cooperation of the Committee of One Hundred has been largely with philanthropic associations throughout the country, and also with various other organizations, particularly labor organizations. Cooperation with universities is needed. There are some universities in America that contemplate developing courses which will prepare persons as expert hygienists who intend to enter the federal or state government offices, granting them the degree of doctor of public health, as is now done in England, after they have pursued a certain curriculum. He read a letter from President Roosevelt, who said: "The aid of the federal government is necessary to supplement the work of state and local boards of health. Federal activity in these matters has already developed greatly, until it now includes quarantine, meat inspection, pure food administration, and investigation of child labor." Whatever further cooperation and co-ordination is desirable toward the promotion of national health and vigor should command the support of all thoughtful citizens.

In order to get practical measures through Congress it will be necessary to begin work in the different states. The first step will probably be the appointment in the House of Representatives of a committee on public health. There is no such committee there now, but there is one in the Senate. A second step will be the redistribution of the existing health bureaus of the government. It is hoped that this will be accomplished through the endorsement of the Committee of One Hundred. Another step will be taken to increase the appropriations for the existing bureaus and to enlarge and co-ordinate their powers, and finally to establish new bureaus to make the system complete.

As to the future plans of the Committee of One Hundred, the executive office is engaged in organizing a legislative council of persons who can advise with the legislative subcommittee as to the measures to be brought before congress.

There is a plan on foot to establish a health magazine. An editor has been selected provisionally, and it is intended that this magazine shall cover the field of personal as well as public hygiene. Through publicity the Committee of One Hundred hopes to establish in the minds of the American people a national consciousness of the importance of health ideals. Whether the health problem be viewed from an economic or spiritual standpoint, it is certainly true, as Emerson said, "the best wealth of a nation is its health."

PROF. CHARLES R. HENDERSON, University of Chicago, said that medical men should have the first word in all questions of hygiene, but students of social institutions and movements also have a rôle in making ideas about health effective in conduct and law. The general public must be taught and be reminded when they forget, that many diseases which originate with the neglected, are spread by infection and contagion; that the common air we breathe, the dust of the street, domestic animals and insects, clothing from sweat-shops, cigars of rich aroma, may be vehicles of death. Even the despised prostitute finds her revenge in mansions and palaces where the highest medical skill fails to save purest women from sterility or death. But even when disease is not contagious, it enfeebles the noblest machine of capital, the human body. It makes investment barren, while the costly plant waits for the return from hospital of skilled workmen. Rent, interest, profits, taxes and wages, all forms of income of all classes, leak away in sickness; while disease itself produces dependence and burdens charitable societies and public relief with enormous costs. With weakness of body comes the feeble will, the nerveless conscience, the stolid and hopeless heart. Character is the result of habit, and habit of repeated explosions of energy; and so on the physical side the condition of efficient moral character is power to will, a product of force assimilated from food and conserved by hygienic living. The seeds of disease are often brought from areas beyond our vision or control—the plague from India, the yellow fever from the West Indies, tuberculosis from everywhere.

Those who can be producers of wealth we need to keep at their highest point of industrial efficiency. The victims of bad sanitary conditions are not always the degenerates. Often they are the vigorous, the skilled, the competent, whose death is a universal loss. The local and federal governments are essential factors in any adequate effort to investigate the causes and origins of industrial maladies, and we must invoke the most energetic and careful activity of the bureau of labor, the census agencies, and state commissioners of health and of labor in the inquiry. In the sanitary measures to prevent disease and the protective laws to avoid accidents, the power of the legislatures is rightly made tributary to our policy of maintaining the industrial and spiritual efficiency of the people. But when we ask ourselves where we can secure money for affording prompt medical and surgical care, support of families during tedious illness and convalescence of bread-winners, and opportunities of open-air life so necessary to restore impaired strength, we find but two sources, humiliating charitable relief or workingmen's insurance funds. Fairly facing this issue, the ultimate course can not be doubted. The American people, the speaker said, will never consent to reduce its sons of toil to beggary. America will yet outstrip the other nations of the civilized world in building up accident, sickness, invalid and old-age insurance funds, based on just contributions of all parties in interest and obligation, and to such a fund any wounded or sick man can resort in the hour of trial without shame and without dishonor. The fund will be his own by right, for it was built out of the product of his labor when he could labor, and it will be adequate when states and nation perfect the legal arrangements for its creation, maintenance and wise administration. Then, also, members of the medical profession will be paid for the prevention of disease and for increasing the physical, industrial and moral energies of the nation. At present their pecuniary interest is in conflict with their social function, and their desire to be useful to the race. This conflict should be averted so far as possible, and when physicians are paid from funds of insurance associations, according to rates equitably fixed, they will be more directly free to put forth all their powers to further the higher interests of mankind.

DR. GEORGE H. SIMMONS, Chicago, said that the work that is being carried on at Washington in the various departments is gradually broadening and becoming more scientific and more valuable in every way. Few really know how much work is being done. Much scientific work is being done in the Department of Agriculture, where there is the Bureau of Animal Industry, but this work, however, relates only indirectly to public health. Meat inspection indirectly pertains to the public health of both this and foreign countries. Excellent work is being done under Dr. Wiley in the Bureau of Chemistry and in the Drug Laboratory, relative to the investigation of frauds in foods, "patent medicines," etc., all relating indirectly to the public health.

Vital statistics do not properly belong to the Department of Commerce and Labor, but to the bureau of health, if it should be organized. This country has practically no morbidity or mortality statistics. A majority of the states do not report the births or deaths, much less the morbidity or mortality rate.

Splendid work is being done in the Hygienic Laboratory of the Public Health and Marine-Hospital Service at Washington. Dr. Stiles is now in the South, investigating hookworm disease, and no doubt will show that some of the terrible afflictions which we are told result from child labor, weakened conditions, etc., really come from hookworm disease. Good work is being done in the various departments of this service directly in the interest of public health.

Dr. Simmons thinks that the Committee of One Hundred should appoint a committee to investigate what the national government is doing in the various departments, to find out the cost of various enterprises, and to show how much is spent for protecting animals against disease, and what an infinitesimally small amount is expended for the health of the people. Congress should be furnished with definite data and facts as to what is being done, so that congressmen may have something tangible to work with.

DR. CRAIG, representing the National Association of Fraternal Societies, said the association of fraternities of America comprise fifty fraternal beneficiary associations, with a membership of 2,000,000. The committee on contagious, hereditary and infectious diseases is now making an effort to secure the cooperation of the papers. Each organization already has an official organ, and these papers or organs are read by approximately 5,000,000 readers monthly. An effort is being made on the part of this committee to secure the cooperation of the editors of these papers to devote a column or two columns to the subject of public health, articles to be contributed by medical men and laymen, and to appear simultaneously in these various papers monthly. In the course of a year or so, with these articles appearing monthly, they hope to be able to launch an effective campaign of education among the different members.

MAJOR LOUIS L. SEAMAN, New York, said the unnecessary loss of human life in war from preventable causes constitutes its most frightful aspect, as is proved in the recent war of Japan with Russia, the statistics having been absolutely reversed simply by the application of the principles advocated at this meeting. In all the records of histories of wars there has scarcely ever been one of any magnitude in which five lives have not been sacrificed to disease for every legitimate death as a soldier. The difference between a martyr and a victim is as great as the difference between the diameters of the celestial hemisphere, and a government that does not take advantage of the simple laws of sanitation is reprehensible for its action. In our late war with Spain, which occurred long after the discovery of modern medicine, as it is understood now on the theory of bacterial development, fourteen men were lost from disease for every one that was killed in battle. He thinks it is a disgrace to any government to permit such a condition of affairs to exist. On the other hand, in the Japanese war the figures were reversed, namely, five men were killed in battle for every one who died from a preventable disease. The Japanese accomplished this simply by the application of modern sanitary regulations and the regulation of the dietary of the soldiers.

DR. EDWIN B. TUTEUR, Chicago, referred to the pollution of streams and rivers, and said that streams should not be converted into open sewers, as they are a menace to life and health. Polluted waters convey virulent bacteria, and all waters once contaminated are dangerous to use by any community. It is well known that waters are subject to self-purification to a degree, but one can never tell when a contaminated water again becomes fit for domestic use. Sewage and waste products from factories, etc., should not be allowed to enter water supplies that are intended for consumption. This is one prolific source of disease. The United States government is not sufficiently solicitous as to the health of its first and most valued asset—the citizen. A second cause is lack of education on the part of the public as well as the representatives of the public. A third cause lies in the fact that in this country trade and commerce overshadow all else without exception. A fourth cause is self-consciousness on the part of specific individuals or communities. A fifth cause is carelessness and failure on the part of the government to recognize and apply the results of the valuable hygienic work of the scientific physician or bacteriologist. Some of the causes enumerated suggest their own remedy. The treatment of these evils resolves itself practically into a well-directed, steadily progressive, persistent campaign of education. Every channel, from the great daily newspaper to the weekly and monthly periodical, down to the handbill, can be used with advantage. Public meetings, addressed by public-spirited individuals of prominence, men and women, who understand what they are talking about and whose words will carry conviction, should be held in school houses, churches or suitable places Sundays or evenings. When this is done, the movement for the federal regulation of public health will sweep on with increasing momentum until our fondest hopes of securing good effective laws will be realized.

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## WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Seventeenth Annual Meeting, held at St. Louis, Dec. 30-31, 1907.*

The President, DR. CHARLES W. OVIATT, Oshkosh, Wis., in the Chair.

### Officers Elected.

The following officers were elected for the ensuing year: President, Dr. W. W. Grant, Denver; vice-presidents, Drs. Willard Bartlett, St. Louis, and Harry A. Sifton, Milwaukee, Wis.; secretary-treasurer, Dr. Arthur T. Mann, Minneapolis; executive council, Dr. C. H. Mayo, Rochester, Minn., and Dr. J. F. Percy, Galesburg, Ill.

Minneapolis was selected as the place for holding the next annual meeting, Dec. 29-30, 1908.

### Largest Common Duct Stone on Record.

DR. WILLARD BARTLETT, St. Louis, Mo., reported the case of a man, 46 years of age, who gave a history of gallstone disease extending over twenty years, which was referable to the common duct. The stone could be palpated through the abdominal wall; still the man was jaundiced only at times. The stone measured 4 inches in length by 1½ inches in diameter and weighed 2½ ounces. The duct was partly sutured and drained for one month. Five months later the patient was in better condition than he had ever been in his life before.

### The Pathologic Gall Bladder.

DR. B. B. DAVIS, Omaha, said that because a patient has lived through an operation, it does not necessarily mean that he is cured. Unless the gall bladder continues to functionate normally and painlessly, the patient is not willing to consider himself cured. Many of the patients in whom drainage is instituted have a recurrence of the symptoms and a secondary cholecystectomy becomes necessary. This usually produces a relief of all symptoms.

The following conditions, in Davis' experience, call for extirpation: (1) Adhesions between the gall bladder and the stomach, colon or omentum. (2) Stenosis, or even narrowing of the lumen of the cystic duct, due to old inflammation or pressure necrosis from an impacted stone. (3) Gall bladders with thickened walls due to long-continued cholecystitis. (4) When external fistulas or fistulas between the gall bladder and the stomach or colon are present. (5) When the gall-blad-

der wall is made up of scar tissue largely displacing the normal muscular coats. (6) When the gall bladder is found filled with mucus, clear or tarry, and there is no fresh bile. (7) In gangrene, perforation and empyema of the gall bladder.

Cholecystostomy in the presence of the conditions given, as a rule, does not relieve, and extirpation has to be done later. In most cases the cholecystectomy can be done as a primary operation, without adding to the operative risk. The author believes in the retention of every gall bladder that will not be a menace to future comfort.

**Differential Diagnosis of Duodenal Ulcer from Gallstones.**

DR. W. D. HAINES, Cincinnati, Ohio, said that the prominent symptoms in common are pain, vomiting and gas, pain in the upper right quadrant of the abdomen. While in cholelithiasis, the pain, which is sharp, decisive and of sudden onset, is referred to a point opposite the right ninth costal cartilage, it may radiate over the entire right side of the abdomen, and not infrequently to the right shoulder joint or to the region of the tenth dorsal vertebra. Vomiting, if present, is characteristic in that the ejected matter is bile stained, consisting largely of mucus, and affords no relief to the patient. Hot fomentations may give temporary relief, but full doses of morphin are usually required.

In duodenal ulcer the pain recurs at intervals, is less sudden of onset, and severe in character. It is described as a burning or gnawing sensation, which may last a few days or continue for months after the primary attack. Some relief invariably follows the ingestion of a full meal, lavage of the stomach, or the drinking of a quantity of alkaline fluid. The spasm of the pylorus is a frequent accompaniment of ulcer, but wholly unknown in early gallstone cases. Spasm of the diaphragm is evidence of severe pain, which, if referred to the region under consideration, indicates gallstones, as ulcer pain, in the absence of perforation, is not of sufficient severity to produce this symptom. Gaseous distension speaks for ulcer, and the accompanying pain quickly subsides after expulsion by eructations or vomiting. Muscular rigidity and local tenderness are present in both ulcer and stone cases. The slight transitory disturbance of the one, and the invalid-dealing influence of the other, will materially assist in putting one right in the diagnosis. Hemorrhage occurring during an attack of gallstones is accidental, but it is prominent as one of the late manifestations in ulcer. Jaundice, like hemorrhage, is a late symptom and may be present in either of the conditions under consideration. Jaundice following lancinating pain of sudden onset, localized in the upper right quadrant of the abdomen, radiating over the right chest wall or accompanied by pain in the right shoulder, will warrant a conclusion of the presence of gallstones. Constipation is one of the early effects of duodenal ulcer. In a certain percentage of the chronic and some of the acute cases of stone and ulcer, differentiation will be reserved for exploratory incision.

**Peptic Ulcer of Jejunum.**

DR. F. GREGORY CONNELL, Oshkosh, Wis., reported one case of this character in which a secondary gastroenterostomy was performed three years after anterior gastroenterostomy for pyloric ulcer with stenosis, and presented an analysis of thirty-nine cases found in the literature. He concludes that: (1) Peptic ulcer of the jejunum is a possible result of gastrojejunostomy. (2) It is probably of more frequent occurrence than the thirty-nine reported cases indicate. (3) It follows the long loop operation more often than the no loop operation. (4) The symptoms may be latent until either acute hemorrhage or perforation occurs. (5) The symptoms may be chronic and simulate those of gastric or duodenal ulcer. (6) Peptic ulcer of the jejunum should be considered in all cases of return of symptoms after gastrojejunostomy. (7) A symptomless period after the operation is necessary to eliminate a continuation of the condition for which the gastrojejunostomy is performed. (8) A differential diagnosis can rarely be made before operation. (9) Prophylactic treatment, aiming to reduce the excess of acidity, should be instituted after all gastrojejunostomies for benign conditions, and should be continued for at least six months. (10) Treatment is either medical or surgical, similar to that for gastric or duodenal ulcer. (11) The possible occurrence of ulcer of the jejunum is an additional reason for performing gastrojejunostomy only where it is positively indicated, namely, by pyloric obstruction.

**Removal of Gallstones in Common Duct Through the Lesser Omentum.**

DR. M. L. HARRIS, Chicago, said that the gall bladder and its contained stones may be enucleated without much difficulty, but if the common duct harbors stones, it may be impossible to reach them by the usual route. He referred only to those cases in which the stone is in the upper part of the duct or movable within the duct, and which, owing to the pyloric end of the stomach having been drawn to the right by the adhesions, lies behind this portion of the stomach as well as the duodenum. In two cases of this kind which have come under his care, after a somewhat prolonged, fruitless effort to reach the common duct in the usual way, he succeeded in reaching and removing the stones by following a new route through the gastrohepatic or lesser omentum above the pyloric end of the stomach. These two cases he reported in detail. The advantages of this route in these cases are the great saving of time over attempting to work one's way through an almost impossible mass of adhesions, and the lessened dangers of injuring the duodenum or other structure.

(*To be continued.*)

## SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Twentieth Annual Session, held at New Orleans, Dec. 17-19, 1907.*

(*Continued from page 149.*)

**Treatment of Fractured Femur.**

DR. W. P. CARR, Washington, said that results can be obtained in nearly all cases of simple fracture that are both functionally and anatomically perfect if the following points are carefully observed: Extension by weight and pulley or other efficient means must be used daily. The shortening must be absolutely overcome in the first twenty-four or at most thirty-six hours, or it can never be entirely overcome. From ten to twenty-five pounds' weight will be required to do this, and great care to see that the weight is effective. Shortening is due to faulty application of the weight or too little weight. Catching of some part of the apparatus on the foot of the bed or in the mattress or bed clothing, and slipping down in bed, are the most common defects. The traction should be applied so as to tend to lift the heel and not pull it down against the mattress as so commonly happens. Slipping down is best prevented, not by elevating the foot of the bed, but by elevating the lower half of the mattress to an angle of 20 degrees. In fractures just below the lesser trochanter, the elevation should be 35 or 40 degrees, flexing the thigh to that extent, and the limb should be abducted slightly. Compound fractures should, as a rule, be wired, as the wound is usually contaminated and chances of suppuration are lessened by open operation and thorough cleansing of the parts. Children are best treated by vertical extension. All shortening can be absolutely avoided by care during the first few days. Careful measurements should be made and skiagrams, when possible. Any case not in satisfactory position at the end of a week should be wired. If simple rules of mechanics are observed, a single small loop of soft iron wire is all that will be needed to prevent shortening, lateral displacement or rotation. Iron wire is much stronger than silver. Angular deformity must be prevented by traction, plaster-of-Paris cast, or splints, no matter what method of fastening the bones be used.

Three instruments were shown that have proven very useful in resecting and wiring bone. First, a modification of Wyeth's bone saw, much simpler and more effective than Wyeth's. Second, a bone drill made like a small brace and bit, to be used in one hand while the other hand is free to hold the bone. Third, a very small, thin, grooved director, small enough to pass through the drill hole and guide the wire. This is very useful in passing the wire from within outward through the second fragment, especially when oozing of blood obscures the opening of the drill hole.

### Treatment of Relaxed Knee-Joint.

DR. ALBERT H. FREIBERG, Cincinnati, Ohio, said that (1) many cases of so-called functional knee symptoms are due to reflex atrophy of the quadriceps following injury. (2) The term relaxed knee-joint should be reserved for such cases. (3) The injury may be so slight that its etiologic relation is overlooked. (4) The atrophy following injury can in many cases not be explained by the theory of inactivity. (5) Cure of these cases will be brought about by the restoration of the normal volume and strength of the quadriceps extensor. (6) In some cases recovery is so protracted as to warrant belief in material damage to the central nervous system. While in such cases endeavors are necessarily limited to treatment at the periphery, ultimate recovery may be expected to follow persevering and well-directed effort.

### Treatment of Diffuse Suppurative Peritonitis.

The paper by DR. STUART MCGUIRE, Richmond, Va., will appear in full in THE JOURNAL.

### Pulmonary Embolism.

DRS. WILLARD BARTLETT and R. L. THOMPSON, St. Louis, Mo., reported 22 cases, 16 of them surgical. Autopsy was performed on the majority of the 22. Pulmonary embolism occurred in these cases at intervals varying from one to twenty-eight days. Two of their patients recovered, but twenty died, the interval being the onset of pulmonary symptoms and death varying from a few seconds to twelve hours. The symptomatology is considered, as is also the prophylactic treatment.

### Diagnosis of Extrauterine Pregnancy.

DR. H. J. BOLDT, New York, included under the term extrauterine pregnancy all fecundations which were situated outside the uterine cavity. He said that uninterrupted extrauterine pregnancy is but rarely recognized, and then usually by mere accident. He had never palpated a tubal pregnancy prior to the occurrence of symptoms due to the pathologic implantation of the ovum, except in one instance, a double tubal gestation. In this case, however, the right tubal gestation gave rise to symptoms and was diagnosed. On the opposite side a tubal enlargement was felt, the nature of which was not diagnosed, but on operation the tubal distension proved to be due to a tubal pregnancy which had not begun to be interrupted by bleeding within the tube, or by any inflammatory process about the tube. The distension was limited to the outer two-thirds of the tube, which was freely movable and did not possess the doughy feeling of a pyosalpinx, or the tense elasticity of a hydrosalpinx, which he had supposed to exist on that side.

The absence in the history of the passing of a decidua does not, however, exclude the presence of ectopic gestation. In the large number of extrauterine pregnancies the author had seen, nearly three hundred, less than one-half gave an affirmative history on this point. A decidua might be passed unnoticed, or it might remain in the uterus and eventually be transformed into normal endometrium. Dr. Boldt pointed out that after the second half of the gestation period the diagnosis depends on one's ability to determine the presence of a fetus outside of the uterus, which is, as a rule, not very difficult, unless the fetus is located between the folds of the broad ligament, and the woman has thick abdominal walls, or the fetus has been dead for some time, and is not in close contact with the abdominal parietes or the cul-de-sac of Douglas. At this period of gestation the history will aid very much.

The greatest difficulty in making a correct diagnosis is in differentiating an ectopic gestation in its early stages from purulent inflammatory conditions of the adnexa, or of mistaking ectopic gestation for early abortion.

Appendicitis may sometimes be mistaken for extrauterine pregnancy, or the opposite error may occur.

### Renal Decapsulation for Chronic Parenchymatous Nephritis.

DR. J. C. OLIVER, Cincinnati, presented a full report of the case of a young man on whom decapsulation of both kidneys was practiced Dec. 9, 1905, for the relief of chronic parenchymatous nephritis. The first favorable sign following operation was an improvement in vision on the sixth day. The average secretion of urine prior to operation was from 4 to 15 ounces in twenty-four hours. He passed 19 ounces the day following operation, and by the end of a week this amount had increased to 50 ounces. The pre-existing general edema diminished rapidly; the percentage of urea excreted was increased, but the percentage of albumin remained high. This period of improvement was followed by one of relapse. The edema increased rapidly, and repeated tappings were necessary. The heart exhibited symptoms of gradual dilatation, and there were almost nightly attacks of severe dyspnea. The patient became so desperately ill that his demise was looked for almost daily. A marked improvement took place in his condition about the first of April and the patient was able to get up and walk about. He continued to improve, and he gained in strength to such a degree that he was able to do some light work. There was but little further gain in the eyesight after the primary improvement. The patient was suddenly taken ill during the first week in October. He became comatose, remained in that condition, and at the end of three days expired. There was no return of dropsical conditions. The death was in all probability attributable to the deranged heart.

### Inoperable Sarcoma of the Neck.

DR. OLIVER also reported a case of inoperable sarcoma of the neck, which was apparently cured by a combination of Coley's toxins and exposure to the Roentgen ray. The treatment extended over a period of five months, at the conclusion of which the tumor masses had entirely disappeared. Nineteen months after the apparent cure a small nodule appeared in the right parotid region. The patient is now receiving injections of the toxins in the hope that these newer manifestations may also prove amenable to the treatment.

### Traumatic Epilepsy.

DR. E. DENEGRE MARTIN, New Orleans, called attention to the importance of examining all scalp wounds immediately after injury to determine whether or not fracture might be present and to the need of operation at any time that symptoms of cortical irritation are manifested, whether due to or suspected to be of traumatic origin. He reported 3 cases.

*(To be continued.)*

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## *Medical Education and State Boards of Registration*

### COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, February 3. Secretary, Dr. S. L. Lee, Carson City.

NEW YORK State Board of Medical Examiners, Albany, February 4-7. Chief of Examinations Division, Charles F. Wheelock, Albany.

NEBRASKA State Board of Health, State Capitol Building, Lincoln, February 5-6. Secretary, Dr. E. J. C. Sward, Oakland.

KANSAS State Board of Medical Registration and Examination, February 11. Secretary, Dr. D. P. Cook, Clay Center.

WYOMING State Board of Medical Examiners, Laramie, February 12-14. Secretary, Dr. S. B. Miller, Laramie.

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**Oklahoma Reorganization.**—The Oklahoma State Board of Health met in Muskogee, December 16 and 17, to formulate and suggest to the legislature medical laws for the new state. They will suggest one central board of medical examiners for all classes of physicians. Every physician in the new state not presenting proper qualifications will be required to pass an examination before the new state medical board in the near future. The date has not been named. At present the Board of Health also acts as the examining board, and at this meeting several licenses were issued.

**Utah July and October Reports.**—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the written examinations held at Salt Lake City, July 1-2, and Oct. 7-8, 1907. The number of subjects examined in was 22; total number of questions asked, 100; percentage required to pass, 75.

At the examination held July 1-2, the total number of candidates examined was 4, all of whom passed. One candidate, a

graduate of Washington University, 1907, was licensed through reciprocity with Missouri. The following colleges were represented:

| PASSED. | Year Grad. | Per Cent. |
|---|---|---|
| College of P. and S., San Francisco | (1907) | 84 |
| Northwestern Univ. Med. School | (1907) | 87.5 |
| University of Louisville | (1906) | 84.1 |
| Medico-Chirurgical College, Philadelphia | (1907) | 85 |

At the examination held October 7-8, the total number of candidates examined was 5, all of whom passed. Two reciprocal licenses were granted at this examination. The following colleges were represented:

| PASSED. | Year Grad. | Per Cent. |
|---|---|---|
| Rush Med. Coll. | (1907) | 85.8 |
| University of Louisville | (1907) | 78.6 |
| Washington University, St. Louis | (1906) | 87.1 |
| University of Buffalo | (1904) | 88.3 |
| University and Bellevue Hosp. Med. Coll. | (1905) | 86.6 |

| LICENSED THROUGH RECIPROCITY. | Year Grad. | Reciprocity with. |
|---|---|---|
| Northwestern Univ. Med. School | (1907) | Illinois. |
| Medico-Chirurgical College, Kansas City | (1905) | Kansas. |

**Georgia Homeopathic October Report.**—Dr. R. E. Hinman, secretary of the Homeopathic Board of Medical Examiners of the State of Georgia, reports the examination held at Atlanta, Oct. 1, 1907. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. Only one candidate, a graduate of Howard University, 1880, appeared for license and was successful.

**Montana October Report.**—Dr. W. C. Riddell, secretary of the Board of Medical Examiners of Montana, reports the written examination held at Helena, Oct. 2-4, 1907. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 24, of whom 14 passed and 10 failed. The following colleges were represented:

| PASSED. College. | Year Grad. | Per Cent. |
|---|---|---|
| Rush Med. Coll. | (1904) | 80.1 |
| Chicago Coll. of Med. and Surg. | (1907) | 75.7 |
| Chicago Homeo. Med. Coll. | (1902) | 79.4 |
| College of P. and S., Chicago | (1904) | 76.4 |
| Northwestern Univ. Med. School | (1906) | 81 |
| University of Iowa | (1907) | 75.5 |
| Baltimore Med. Coll. | (1903) | 82.3 |
| College of P. and S., Baltimore | (1903) | 83.7 |
| Woman's Med. Coll. of Baltimore | (1906) | 78.2 |
| Hamline University | (1906) | 84.2 |
| University of Minnesota | (1904) | 85 |
| University of Michigan | (1907) | 85.2 |
| University of Missouri | (1903) | 78.4 |
| Manitoba Med. Coll., Canada | (1907) | 78.3 |
| FAILED. | | |
| University of California | (1906) | 74.6 |
| Bennett Coll. of Ecl. Med. and Surg. | (1879) | 35.9 |
| Illinois Med. Coll. | (1900) | 66.5 |
| Sioux City Coll. of Med. | (1906) | 66.9 |
| Hospital Coll. of Med., Louisville | (1895) | 66.8 |
| University of Minnesota | (1905) | 71.7 |
| University Med. Coll., Kansas City | (1893) | 47.4 |
| Marion-Sims Med. Coll. | (1895) | *66 |
| Columbus Med. Coll. | (1889) | 71.9 |
| University of Turin, Italy | (1899)† | |

* Third examination.
† Papers in Italian and not rated.

**Texas October Report.**—Dr. G. B. Foscue, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Fort Worth, Oct. 22-23, 1907. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 24, of whom 19 passed and 5 failed. The following colleges were represented:

| PASSED. College. | Year Grad. | Per Cent. |
|---|---|---|
| Columbian University, Washington, D. C. | (1903) | 91.4 |
| Denver and Gross Coll. of Med. | (1902) | 83 |
| Colorado School of Med. | (1901) | 89.7 |
| Northwestern Univ. Med. School | (1907) | 83.5 |
| College of P. and S., Chicago | (1905) | 83.6 |
| University of Louisville | (1907) | 94 |
| Maryland Med. Coll. | (1905) | 83.3 |
| Louisville Med. Coll. | (1906) 90.8; (1907) | 81, 89.2 |
| Leonard Med. School | (1906) | 80.7 |
| University of Pennsylvania | (1902) | 82 |
| University of Nashville | (1907) 75.8, | 79, 82.5 |
| Memphis Hosp. Med. Coll. | (1906) | 92.9 |
| Southwestern Univ. Med. Coll., Dallas | (1905) | 85 |
| University of Virginia | (1907) | 95.4 |
| McGill University, Quebec | (1904) | 94.8 |
| FAILED. | | |
| Maryland Med. Coll. | (1907) | 70.4 |
| Kansas City Med. Coll. | (1903) | 62.1 |
| University of Tennessee | (1894) | 50.7 |
| Meharry Med. Coll. | (1907) | 72 |
| Baylor University, Dallas | (1907) | 73.3 |

**Florida November Report.**—Dr. J. D. Fernandez, secretary of the Regular Board of Medical Examiners of the State of Florida, reports the written examination held at Jacksonville, Nov. 20-21, 1907. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 38, of whom 32 passed and 6 failed. The following colleges were represented:

| PASSED. College. | Year Grad. | Per Cent. |
|---|---|---|
| University of Alabama | (1905) 84.2; (1907) | 79.5 |
| Birmingham Med. Coll. | (1905) | 88.7 |
| Georgetown University | (1907) | 83.2 |
| Atlanta School of Med. | (1906) | 77.1 |
| College of P. and S., Atlanta | (1904) 84.2; (1907) | 83.5, 89 |
| Atlanta Med. Coll. | (1894) | 75 |
| Northwestern Univ. Med. School | (1902) | 94.2 |
| College of P. and S., Chicago | (1907) | 83.8 |
| Louisville Med. Coll. | (1907) | 90.2 |
| University of Louisville | (1907) | 86.4 |
| Tulane University of Louisiana | (1887) | 92.7 |
| University of Michigan | (1905) | 90.3 |
| University of Maryland | (1906) 94.2; (1907) | 82 |
| Washington University, St. Louis | (1875) | 75 |
| St. Louis Med. Coll. | (1873) | 75 |
| University and Bellevue Hosp. Med. Coll. | (1907) | 94.4 |
| University Med. Coll., New York City | (1878) 75; (1896) | 93 |
| University of North Carolina | (1907) | 93.2 |
| Jefferson Med. Coll. | (1902) | 94.8 |
| Philadelphia Coll. of Med. and Surg. | (1857) | 75 |
| University of Pennsylvania | (1900) | 93 |
| University of Tennessee | (1889) 75; (1907) | 84.2 |
| Columbus Med. Coll. | (1886) | 75 |
| Med. Coll. of Virginia | (1907) | 80.8 |
| University Coll. of Med., Richmond | (1905) | 81.8 |
| University of Virginia | (1903) | 92.8 |
| FAILED. | | |
| Atlanta Med. Coll. | (1869) | .5 |
| Medical College of Georgia | (1902) | 19.5 |
| Louisville Med. Coll. | (1875) | 22 |
| University of the South | (1906) | 71 |
| Vanderbilt University | (1898) | 67 |
| Medical Coll. of South Carolina | (1904) | 64 |

**Delaware December Report.**—Dr. P. W. Tomlinson, secretary of the Medical Council of Delaware, reports the written examination held at Dover, Dec. 10-12, 1907. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 3, of whom 1 passed and 2 failed. The following colleges were represented:

| PASSED. College. | Year Grad. | Per Cent. |
|---|---|---|
| Jefferson Medical College | (1906) | 87.9 |
| FAILED. | | |
| Maryland Medical College | (1907) | 66.5, 74.6 |

**New Jersey Reciprocity Report.**—Dr. J. W. Bennett, secretary of the Board of Medical Examiners of New Jersey, sends us the following list of reciprocal licenses issued during the year 1907:

| LICENSED THROUGH RECIPROCITY. College. | Year Grad. | Reciprocity with. |
|---|---|---|
| College of P. and S., Chicago | (1905) | Illinois |
| Hahnemann Med. Coll., Chicago | (1906) | Illinois |
| Medical School of Maine | (1897) | Maine |
| Johns Hopkins Med. School | (1905) | New York |
| Baltimore Med. Coll. | (1901), (1906) | New York |
| College of P. and S., Baltimore | (1904) | New York |
| Baltimore University | (1899) | New York |
| Detroit Coll. of Med. | (1907) | Michigan |
| University of Michigan | (1887) | Maine |
| University of Minnesota | (1894) | Minnesota |
| Boston University | (1906) | Maine |
| Dartmouth Med. School | (1904) | New Hamp. |
| Syracuse University | (1905), (1906) | New York |
| Bellevue Hosp. Med. Coll. | (1897) | New York |
| N. Y. Med. Coll. and Hosp. for Women | (1905), (1906) | New York |
| University of Buffalo | (1893) | New York |
| N. Y. Homeo. Med. Coll. | (1900), (1899), (1902) | New York |
| N. Y. Homeo. Med. Coll. | (1905), (3, 1907) | New York |
| Long Island Coll. Hosp. | (1899), (1903), (3, 1905), | New York |
| Long Island Coll. Hosp. | (1906) | New York |
| Coll. of P. and S., N. Y. | (1889), (1894), (2, 1900) | New York |
| Coll. of P. and S., N. Y. | (2, 1901), (2, 1903), (5, 1905) | New York |
| Coll. of P. and S., N. Y. | (6, 1906), (3, 1907) | New York |
| Univ. and Bellevue H. M. C. | (1905), (3, 1906), (1907) | New York |
| Cornell University | (2, 1906) | New York |
| Eclectic Med. Coll., of New York | (1904) | New York |
| University of Pennsylvania | (1903), (1904), (1905) | New York |
| Jefferson Med. Coll. | (1905) New York; (1906) | Maine |
| Medico-Chirurgical Coll., Philadelphia | (1900) | Delaware |
| University of Vermont | (1895) | New York |
| McGill University, Quebec | (1903) | Maine |
| University of Rome, Italy | (1896) | New York |
| University of Munich, Germany | (1898), (1904) | New York |
| University of Naples, Italy | (1899), (1905) | New York |
| University of Würzburg, Bavaria, Germany | (1906) | New York |

**Arizona October Report.**—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written

examination held at Phoenix, Oct. 7-8, 1907. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 5, all of whom passed. The following colleges were represented:

| College. | PASSED. Year. Grad. | Per Cent. |
|---|---|---|
| University of Southern California | (1907) | 87.2 |
| Johns Hopkins Med. School | (1906) | 85.9 |
| University of Michigan | (1904) | 87.5 |
| Medical Coll. of Ohio | (1883) | 75.2 |
| University of Cambridge, England | (1881) | 77 |

**South Carolina Homeopathic 1907 Report.**—Dr. J. A. Whitman, chairman of the South Carolina Homeopathic Medical Examining Board, sends us a report of one reciprocal license issued during the year 1907. The candidate, a graduate of Dunham Medical College, 1902, was licensed through reciprocity with Illinois.

## *Medicolegal*

### Opinions of Physicians on Possible Consequences of Injuries.

The Court of Appeal, Second District, California, says, in the personal injury case of Cordiner vs. Los Angeles Traction Company, that it is often impossible to show by positive proof whether or not an impairment of health or faculties will follow as a result of injury. Hence, of necessity, in determining the question, courts and juries must rely on the testimony of properly qualified physicians for such testimony as will in the minds of the jury establish the fact in issue to a reasonable certainty. Such evidence must be clearly distinguished from conjecture, or that which merely establishes a possibility of future trouble. As a rule, the physician whose opinion is most reliable is loath to give an opinion as to what consequences will or will not follow as a result of an injury in a certain case, but at the same time willing to state the result of his own professional experience and observations in treating cases where like injuries have occurred, and as a result of that experience say that we might or might not expect like results to follow in this case. Testimony of duly qualified experts which shows that in a majority of cases, where the injury consists of a fracture at the base of the brain, such injury results in future epilepsy, paralysis, or mental deterioration, tends to prove the reasonable certainty that such consequences will follow in any given case of like injury.

### Taking of Medicine Evidence of Injury.

The Supreme Court of Alabama holds, in Southern Railway Company vs. Cunningham, a personal injury case brought by the latter party, where one of the contested issues of fact was whether the plaintiff was injured at all, and, if injured, whether the injury was temporary or permanent, that, as shedding light on this issue it was entirely competent for the plaintiff to testify that after the alleged injury he took medicine to cure or relieve his suffering. So, likewise, there was no error in permitting witnesses for the plaintiff to testify that he "was apparently suffering pain."

### List of Analyzed Alcoholic Medicinal Preparations.

The United States Commissioner of Internal Revenue publishes, in Internal Revenue Circular, No. 713, under date of Dec. 3, 1907, for the guidance of collectors of internal revenue and revenue agents, a list of alcoholic medicinal preparations which have been analyzed by his office and classed as compound liquors under the ruling in treasury decision No. 1251, and for sales of which the special tax of liquor dealer is required.

It must be clearly understood, however, he says, that the list given is not exclusive, and does not purport to give the names of all the preparations for the sale of which special tax is or may be required, but embraces only those which have been analyzed by this office and held to be insufficiently medicated to render them unsuitable for use as a beverage. The names of a number of preparations which have been held in previous rulings and letters to be suitable for such use, the manufacture of which has been discontinued or the formulas so modified as to change their classification, are omitted.

For the sale, subsequent to Jan. 1, 1908, of any of the preparations here given, or of any other preparations which do not come within the requirements of the law as to medication, as interpreted in Treasury Decision No. 1251, special tax will be required, even though such sale is made in good faith for medicinal purposes.

The question of the proper classification of the various malt extracts now on the market is still under consideration.

The list given is:

Angostura Aromatic Tincture Bitters.
Aroma Stomach Bitters.
Atwood's La Grippe Specific.
Auguaer Bitters.
Augauer Kidney-Aid.
Belvedere Stomach Bitters.
Bonekamp Stomach Bitters.
Bonekamp Bitters.
Brown's Aromatic Cordial Bitters.
Brown's Vin Nerva Tonic.
Botanic Bitters.
Cinchona Bitters.
Clifford's Cherry Cure.
Cooper's Nerve Tonic.
Cuban Gingeric.
Dandelion Bitters.
De Witt's Stomach Bitters.
Dick's Nutritive Elixir.
Dr. Dade's Blackberry Cordial.
Dr. Bouvier's Buchu Gin.
Dr. Fowler's Meat and Malt.
Dr. Gray's Tonic Bitters.
Dr. Hortenbach's Stomach Bitters.
Dr. Worme's Gesundheit Bitters.
Dr. Rattinger's Bitters.
Duffy's Malt Whiskey.
Ducro's Alimentary Elixir.
Gilbert's Rejuvenating Iron and Herb Juice.
Ginger Tonic.
Ginseng Cordial.
Green's Chill Tonic.
Harrison's Quinine Tonic.
Jerome's Dandelion Stomach Bitters.
Jones' Stomach Bitters.
Juni Kola.
K. K. K.
Katarno.
Kudros.
Lemon Ginger.
Laxa Bark Tonic.
Magen Bitters.
Meta Multa.
Obermueller's Bitters.
Old Dr. Scroggin's Bitters.
Panama Bitters.
Rockandy Cough Cure.
Royal Pepsin Tonic.
Scheetz Bitter Cordial.
Smith's Bitters.
U-go.
Uncle Josh's Dyspepsia Cure.
Warner's Stomach Bitters.
Westphalia Stomach Bitters.
William's Kidney Relief.

### Unskilful Treatment as Defense in Homicide Case.

The Supreme Court of Washington holds, in the homicide case of State vs. Baruth, that where one unlawfully inflicts on the person of another a wound calculated to endanger or destroy life, it is no defense to a charge of murder where death ensues to show that the wounded person might have recovered if the wound had been more skilfully treated. Even unskilful or negligent treatment of the wound on the part of the wounded person or his physician which may have aggravated the wound and contributed to the death does not relieve the assailant from liability. He must show that the negligent and unskilful treatment was the sole cause of death, before he can escape the consequences of his unlawful act on this ground. In this case the evidence did not tend to show that the subsequent treatment of the wound was the sole cause of the death, but that the treatment was unskilful, and, at most, only contributed thereto. This did not constitute a defense.

### Physician's Right of Action Against Company for Breach of Contract.

The Court of Civil Appeals of Texas says, in Texarkana Lumber Company vs. Lennard, that the company operated a sawmill, employing a large number of men who were required to and did reside at and near the mill with their families. There was no town other than the mill settlement, and no physician resident there. It was necessary, and the custom in the operation of such mill was, to employ a physician to reside there, or be near at hand, to give medical aid and attention to the employés, and pay such physician either a salary or certain fees apportioned per capita among the employés The company through its superintendent and authorized agent, wrote to Dr. Lennard: "Will say we will collect for you $1.00 from all single employés, and $1.50 from all employés with families on the mill grounds, employés living in the country you will receive $1.00 from head of families, and for services for balance of families you will only charge half regular rates. We will furnish you with office building and barn and lot . . . If these terms suit you, you can come over and see me and make your arrangements to come with us." The physician accepted the proposition, entered on the performance of his duties, and continued to render medical services to the employés of the company, receiving from the company his compensation therefor under the terms of the letter or contract mentioned, until the company refused to longer pay him for his services or furnish him an office and discharged him.

The court affirms a judgment in the physician's favor. It says that the contract did not simply bind the company as

an agent to collect from its employés and pay over to the plaintiff monthly, the sums therein specified. The language of the letter: "We will collect for you $1.00 from all single employés and $1.50 from all employés with families on the mill grounds," etc., properly and fairly construed "in the light of the evident intention of the parties" and the purpose of the company to subserve its own interest, as appeared from the whole letter, clearly imported an absolute promise on the company's part to pay such sums. The benefits to accrue to the company from the plaintiff's medical services to its employés furnished a good reason and ample consideration for the assumption by it of the obligation claimed, the breach of which by the wrongful discharge of the plaintiff rendered the company liable for such damages as he sustained thereby.

On the question of the amount of damages recoverable, the court says that the physician proved that his services, under the contract, would have been required for not less than 18 months after his discharge, and that his average earnings, exclusive of the office and stable, per month for the six months he was at the mill, measured by the number of men employed, and the proportion that were married and single, was $90.20. His gross average earnings per month for the 18 months succeeding his discharge by the company was $56, out of which he had to pay office rent $15 per month, leaving $41 per month net. This latter amount deducted from $90.20 showed that his loss per month for the 18 months was $49.20. The judgment rendered allowed him $849, or a little over $47 a month, and was not too great.

### Revocation of License Procured on Pretended Diploma.

The Supreme Court of Oklahoma affirms a judgment for the territory in Gulley vs. Territory, which was brought by the territory to cancel a license to practice medicine issued on February 11, 1902, by the then superintendent of public health to the said Gulley, on the ground that the license was procured by fraud and deception. The court holds that a license to practice medicine procured through the presentation of a pretended diploma from a fraudulent medical college, without an examination, will be revoked and canceled in a proper proceeding in the district court. Also, that an action to cancel a license on the ground that it was fraudulently obtained is an equitable proceeding, and the licensee is not entitled to a jury trial as a matter of right.

The so-called diploma in this case was one purporting to have been issued by the Independent and Metropolitan Medical College, located in Chicago, November 4, 1896. The court says that the record disclosed a flagrant case of fraud, deception, and misrepresentation in the procurement of the license. And this was not all. The applicant knew, at the time he made his application and verified the same, under oath, that he was not a graduate of a reputable medical college, within the meaning of the statute. He knew that the pretended diploma which he held from the college was a mere sham and fraud, well calculated to mislead and deceive the territorial board of health. He knew that the obtaining of the diploma was a mere pretense and fraud, and he knew that the Supreme Court of the state of Illinois had, long prior to his application for license to practice in this territory, forfeited the charter of this pretended medical college and declared "that the corporation is a mere diploma mill, designed wholly for issuing diplomas to practice medicine, for a consideration, to persons wholly unqualified for such practice." In this case of Independent Medical College vs. People ex rel Akin, Attorney General, 182 Ill. 274, the right of this medical college to transact business in the state of Illinois was directly involved, and this was the college from whence the defendant represented that he was a graduate.

It was argued that the court erred in admitting in evidence the records of the Illinois courts showing the actions brought by the state of Illinois to revoke and cancel the charters of the Illinois Health Institute, and the Independent Medical College, its successor, and the record of the conviction of Armstrong, the head of these institutions, for the fraudulent use of the mails in operating the same. Clearly, this evidence was competent and material for the purpose of showing that these pretended colleges were fraudulent institutions, and that the pretended diploma was procured from a fraudulent institution.

Did the court err in refusing the defendant a jury trial? This question must be answered in the negative. This was not one of the actions in which the party is entitled to a jury trial as a matter of right. Trial by jury is guaranteed only in those classes of cases where that right existed at common law. The case at bar fell under the well-recognized rules of equity jurisprudence to cancel a license on the ground of fraud, and hence the defendant was not entitled to a jury trial as a matter of right.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

### Boston Medical and Surgical Journal.

*January 2.*

1 Renal Tuberculosis; Diagnosis and Indications for Operation. L. Davis, Boston.
2 *Value of Vaccine Therapy to the General Practitioner in Treatment of Bacterial Diseases. C. Floyd and A. M. Worthington, Boston.
3 *Personal Experiences with Specific Vaccines in Treatment of Bacterial Disease. M. W. Richardson, Boston.
4 *Treatment of Infections with Bacterial Vaccines. R. I. Lee, Boston.
5 *Vaccine Therapy; Report on Sir Almroth E. Wright's London Clinic. H. C. Putnam, Providence, R. I.

2. **Vaccine Therapy.**—Floyd and Worthington describe the method of utilizing vaccine therapy, reporting eighteen cases. They have seen benefit in osteomyelitis, empyema, old appendicular sinuses, acne, generalized kidney infection, boils, puerperal sepsis, carbuncles and secondary infections of the lung, and consider the method of considerable benefit to the physician and surgeon in a large majority of suitable cases when used intelligently. In some cases there will be brilliant results, in others a safe cure, and in still others only some improvement. They draw the following conclusions: 1. Each new method in medicine should have a thorough trial before it is rejected. 2. A non-attenuated specific vaccine, given in proper doses, is esssential to success in the treatment of cases with vaccines. 3. To control the amount and frequency of the dose of a vaccine, either the opsonic index or general clinical symptoms may be the guide. 4. Localized infections of moderate duration offer the best field for treatment. 5. The vaccine treatment, when used in conjunction with medicine or surgery, may lessen suffering and deformity and frequently save life.

3. **Specific Vaccines.**—Richardson makes a communication supplementary to one appearing in the *Boston Medical and Surgical Journal*, Oct. 3, 1907, and abstracted in THE JOURNAL, Oct. 19, 1907, page 1400, concerning the treatment of typhoid with specific sera. His conclusions are as follows: 1. Bacterial inoculation can not accomplish the impossible. It presupposes that the patient has, still in reserve, forces to be called into action. It must be employed as early as possible. 2. Physicians intending to make use of this method of treatment must make original cultures from septic operations. Otherwise, valuable time will be lost, as in this case, with the study of organisms invading secondarily open wounds. 3. In this connection, too, it is perhaps well to emphasize the importance of blood cultures in cases of general bacterial invasion. This procedure gives at once, if successful, the kind of organism concerned and the material for an autogenous vaccine. Blood cultures have proved their worth, especially in typhoid fever in the early days of the disease, when the Widal reaction so often fails. In a certain German clinic, Richardson has heard it is a routine procedure to make blood cultures from any patient showing a temperature.

4. **Bacterial Vaccines.**—Lee emphasizes the fact that with bacterial vaccines we are dealing with a new therapeutic agent different from anything yet employed. While antitoxins and antisera themselves neutralize bacterial toxins, the bacterial vaccine depends for its effect on a response of the organism to stimulation. The action is entirely specific. Not only the species but the variety of the organism must be known; in regard to this the author refers to illustrated cases. In acute

generalized septic conditions the subject of bacterial vaccine treatment is still *sub judice*. Before the use of bacterial vaccines, bacteriology was of little or no use to the surgeon or obstetrician. The treatment was practically the same no matter what the organism. Now, however, the nature of the infecting organism does make a difference in the treatment.

5. **Wright's London Clinic.**—Putnam describes interestingly a visit to Wright's laboratory at St. Mary's Hospital, and prophesies that in 1917 clinics generally will resemble his in definiteness of diagnosis and remedy; that central laboratories will identify micro-organisms for the general practitioner as to-day they identify the Klebs-Loeffler bacillus; and that, as antitoxin and vaccine points are to-day obtainable by the family physician, so also these other vaccines will be furnished from some central laboratory.

### Medical Record, New York.

*January 4.*

6 *Anterior Poliomyelitis as an Epidemic Disease. H. W. Berg, New York.
7 Bacterial Vaccines and Curative Sera. C. Bolduan, New York.
8 *Early Diagnosis and Treatment of Pulmonary Tuberculosis. J. H. Pryor, Buffalo.
9 Points in Medical Education Considered from the Standpoint of the Student. B. Michallovsky, New York.
10 *The Term "Stauungs Hyperaemie." A. R. Allen, Philadelphia.

6. **Anterior Poliomyelitis.**—Berg details the result of his experience of anterior poliomyelitis and discusses the literature of the subject. His own belief is that sporadic anterior poliomyelitis is entirely distinct from the so-called epidemic anterior poliomyelitis, more properly designated; that the sporadic disease is not infectious, and that the epidemic disease is in all probability infectious but not contagious.

8. **Pulmonary Tuberculosis.**—Pryor says that the decrease in the death rate from tuberculosis during the past thirty years has been relative only, not actual, so far as New York State is concerned. Ultimately the problem of tuberculosis will have to be solved by the health officer. The problem involves not a mere bacteriologic question, but a sociologic reform, not mere sunlight and fresh air, but food, sunlight and fresh air. Eighteen meals of oxygen a minute must be accompanied by three square meals of food a day. We may save time by admitting that the public is not properly protected and that the death rate is not diminished by nearly so much as it might be by the early recognition of the consumptive and the adoption of well-known measures for relief. The public has been inoculated with phthisiophobia, and hysterical fear has added hardship to affliction, but there are signs of returning sanity. He discusses the results of the treatment of incipient tuberculosis at Ray Brook, and emphasizes the importance of investigating the possible or probable opportunity for infection, and also of learning if the patient's history reveals evidence of a preceding attack. The lesion under observation may be secondary and due to an autoinfection. The opinion that all pleurisies are tuberculous in origin is in process of revision, but the history of attacks not accompanied by pneumonia may be included as suspicious testimony. He discusses in detail the various points in the definition of incipient tuberculosis adopted by the National Association for the Study and Prevention of Tuberculosis. At one time most consumptives died because they were poor; now most of them die because of ignorance and apathy.

10. **Stauungs Hyperaemie.**—Allen criticises on philologic grounds all the terms so far suggested as English representatives of the mental picture evoked by the German term *Stauungs Hyperaemie*, and he suggests the adoption of this term bodily into English, in place of attempting to find an English equivalent for the Bier constriction method.

### New York Medical Journal.

*January 4.*

11 *A Study of Sour Milk. H. G. Piffard, New York.
12 Presence of Spirochetes in Pseudoleukemia, Acute Lymphatic Leukemia and Lymphosarcoma. W. C. White and F. Proescher, Pittsburg, Pa.
13 Surgical Technic in Diseases of Gall Bladder and Biliary Passages. J. F. Erdmann, New York.
14 Diagnosis of Unilateral Tuberculous Nephrocystitis, with Report of Six Operative Cases. M. W. Ware, New York.
15 *Pathogenesis of Stump Hallucination. A. Gordon, Philadelphia.
16 *Potassium Iodid in Mental Diseases. J. M. Walker, Dubuque, Iowa.
17 Glaucoma in the Very Young. C. A. Veasey, Philadelphia.
18 Case of Typhoid and Tetanus. G. V. R. Merrill, Elmira, N. Y.

11. **Sour Milks.**—Piffard quotes a recent pronouncement of the present head of the health department in New York City to the effect that sour milk is a menace to health and that he will prosecute any one having it in his possession or offering it for sale, and supporting this position by the fact that sour milk is a product of bacterial action and that bacteria gather nourishment from the substances in which they develop and transform what they take into their bodies into useless or poisonous products. Piffard demonstrates the absurdity of this position by an appeal to the patriarchal practice, from the time of Abraham, of regarding sour milk as excellent food, and the patriarchs were not remarkable for the shortness of their lives. Sour milk has been an essential portion of the daily diet for many centuries of the peoples of eastern Europe, western and middle Asia and a part of Africa. Its use has been supported, especially in intestinal disturbances of infants, by medical authorities of the highest standing everywhere. The health officer's condemnation would necessarily include such well-known and widely used products as kumyss, kefir and the various other forms of especially prepared milks, and even the use of ordinary buttermilk. Piffard concludes his article as follows: The assumption by the president of the health department of New York City that sour milk is a menace to health is wholly without scientific foundation, and is opposed to common experience in many parts of the world during a period covering thousands of years. Sour milk is wholesome and nutritious, and is probably more easily digested than sweet milk. In certain derangements of health it is an important direct remedial agent. The present most available souring agents are special bacteria in common use among certain European and Asiatic peoples. The essential organisms as they reach us are frequently contaminated with unessential and possibly undesirable organisms. The proprietary sour milks should be prepared with laboratory pure (streptococci free) cultures of the desired organisms. The proper organisms preserved in some suitable liquid or solid medium can be readily standardized and administered direct. Whether the bacilli derived from kefir are to be preferred to those from mattzoon, or *vice versa*, can not at present be dogmatically asserted. The organisms when placed on the market should be under their proper scientific names and not under a proprietary or trade name. The guarantee behind them should be the reputation of the concern that prepares them. They should be advertised to the profession only and not to the public. It is more than possible that some domestic organisms may be isolated in the future that will prove more desirable than those of foreign origin.

15. **Stump Hallucination.**—Gordon remarks on the commonness in cases of amputation of the limb with which the sensation of the latter remains for a more or less prolonged period of time. The patient feels every segment of the absent limb, either spontaneously or on pressure of the stump. The spontaneous sensations disappear sooner than the sensation provoked by irritation of the terminal ends of the resected nerve. Gordon reports a case and concludes that the question of the pathogenesis can not be decided in exclusive favor of either a central or peripheral origin. Both elements play an important rôle in producing the stump hallucination. His case is peculiar in that the hallucination has persisted for 27 years.

16. **Potassium Iodid.**—Walker believes that potassium iodid has a much wider use than is generally accorded to it in mental diseases other than those due to syphilis, but that it has not hitherto been given in sufficiently large doses. He refers to the dosage as given by various authorities, and points out that very few authors in materia medica and therapeutics advise more than one dram doses three times daily. He reports a series of eleven cases under his care at St. Joseph's Mercy Asylum, in which, by gradually increasing the dose, quantities varying between 15 and 33 drams daily were used with excellent results. He insists that enormous doses should be given only when the patient is on a full diet, and then immediately after meals. He uses the saturated solution in

water or given in milk; but he holds that a saturated solution contains 40 grains to the dram, not 60, as is commonly computed. He has yet to find a person, especially of the class of cases cited (cerebral syphilis, melancholic frenzy, depressive melancholia, alcoholic insanity, puerperal insanity), who is unable to take very large doses of potassium iodid. A primary eruption, principally on the chest and face, with some nausea, almost always occurs when a dose of from 300 to 500 grains is reached, but these conditions disappear on further increase of the dose. His experience in cerebral syphilis is that if treatment is begun within three months after mental impairment is first noticed the patient invariably regains his normal mental faculties. He has had trouble in a few cases in getting the dose above 300 or 400 grains, but that has been when the patients could not eat heartily. He believes that the drug is worth trial in selected tuberculous cases; that the drug is digested and does not pass through unchanged he considers proved by the steady gain of flesh, the marked improvement in mental condition, and the positive test for iodin in the urine in every case.

### Lancet-Clinic, Cincinnati.

*December 28.*

19 Some Brain Landmarks, with Consideration of the Neuropore, Nose, Hypophysis and Mouth. H. Ayres, Cincinnati.
20 *Further Report on Deep Injections of Alcohol for Facial Neuralgia. H. T. Patrick, Chicago.
21 *Everyday Lessons from Everyday Cases. C. A. L. Reed, Cincinnati.
22 Unsuspected Pregnancy. C. E. Houston, Rushsylvania, Ohio.

20. **Alcohol Injections in Neuralgia.**—Patrick reports seven cases additional to those given in his paper in THE JOURNAL, Nov. 9, 1907. He also describes the technic in brief, and states that in future he thinks he will omit the cocain from the solution injected, as it seems unnecessary. He believes the injections the best treatment at our command for the great majority of cases of trifacial neuralgia.

21. **Everyday Lessons.**—Reed's lesson this week is the mischief that is done by the masterful person wise in his own conceit, who thinks he knows it all much better than the doctor or any one else.

### Medical Fortnightly, St. Louis.

*December 25.*

23 *Disposition of Criminal Epileptics in Missouri. S. G. Burnett, Kansas City, Mo.
24 The Distal Mesenteric Artery. B. Robinson, Chicago.

23. **Criminal Epileptics.**—Burnett discusses the relation of epilepsy to crime, especially to murder, and asserts that every state enforcing capital punishment has executed its quota of epileptics. He details the history of three cases of presumably epileptic criminals executed in Missouri and Kansas, and suggests the general use of state asylums for the criminal insane.

### The American Journal of Medical Sciences, Philadelphia.

*December.*

25 *Medical vs. Surgical Treatment of Gastric Ulcer. J. H. Musser, Philadelphia.
26 *Indications for, Methods of, and Results to be Expected from, the Medical Treatment of Gastric Ulcer. C. G. Stockton, Buffalo.
27 *Arteriosclerosis with Special Reference to the Radial Artery. W. S. Thayer and M. Fabyan, Baltimore.
28 *Significance of Tubercle Bacilli in the Feces. R. C. Rosenberger, Philadelphia.
29 Acute Intussusception in the Adult. G. G. Ross and H. F. Page, Philadelphia.
30 *Primary Carcinoma of Urinary Bladder. B. H. Brown, Chicago.
31 Incomplete and Complete Hypothyroidea or Myxedema. R. L. Pitfield, Germantown, Pa.
32 Method of Obtaining Cultures from Human Blood. E. C. Schradieck, New York.
33 *Certain Blood Pressure Lowering Reflexes that Arise from Irritation of Inflamed Pleura. J. A. Capps and D. D. Lewis, Chicago.

25. **Gastric Ulcer.**—According to Musser, gastric ulcer is a medical disease, but with complications and sequels it sometimes becomes a surgical one. If the ulcer is productive of perversion of secretory function alone, it remains a medical affection. Inasmuch as hyperchlorhydria is in part a neurosis, the secretory function can be balanced chiefly by medical, dietetic and hygienic measures. Even if pyloric spasm attends the hypersecretion and hyperacidity, it does not necessarily make the case beyond medical care. It is wrong to submit such patients to operation unless motor disturbances become prominent. But if the symptoms and physical signs of retention from obstruction, dilatation, hour-glass contraction or adhesions supervene and persist; if the symptoms of gastric ulcer become continuous in spite of medical treatment and incapacitate or threaten life; and if hemorrhage occurs and secondary anemia arises, it is a surgical disease. Such cases, however, are always attended by organic sequels. The extraordinary frequency of chronic gastric ulcer with sequels requiring operation is due to neglect of the treatment of an ulcer in its incipiency. Statistics show that most patients are operated on between the thirtieth and fortieth year and have an ulcer history of five or ten years' duration. A surgeon who has good technical ability and has had considerable experience in gastric surgery should be selected. The operation, even of gastroenterostomy, is not trivial, and requires the best service at command. After the surgical procedures of necessity are carried out the patient must be treated medically for a period of four months at least; hygienic and dietetic treatment must be carried out over a period of years. A patient who has had gastric ulcer should observe for all time the hygienic and dietetic rules which keep digestion to an approximately normal state, which prevent anemia, and which, above all, so conserve the nervous system as to prevent neurosis.

26. **Id.**—Stockton summarizes the medical treatment of gastric ulcer as follows: Attempt to secure a calm mind, a quiet nervous system, and improvement of the general health. Make a positive diagnosis, begin treatment early, and carry it out with a painstaking attention to details for a long time. Obtain general rest. In some cases feed the patient sufficiently but discreetly; in others, starve the patient for a period, depending for support on frequent small enemas of normal salt solution. For the control of hemorrhage, in addition to rest, one may succeed by local treatment through the stomach tube, using ice water or adrenalin solution, followed by gelatin water. In irritating hyperacidity one should use local general sedatives and antacids. To relieve hypertension and spasm of the stomach, in addition to suitable drugs, external applications should be used according to the method of von Leube, or the equivalent of these. Finally, treatment should be continued long after apparent cure, and the stools studied for occult blood; the dictum of Bettmann should also be remembered that: "It is not alone the question of how long treated, but how well treated." Statistics mean little, because of the uncertainty of the method and the faulty detail so often observed in the treatment of this disease.

27. **The Radial Artery in Arteriosclerosis.**—Thayer and Fabyan consider the character of the normal radial artery and the common changes that take place during the various decades of life. In old age, a thickened radial artery represents conditions whch are normal and to be expected, not only in peripheral but in central vessels. An unduly thickened radial at an earlier age may mean one of two things: (1) The vessel has been subjected to unusual and exceptional strain, or (2) it is a vessel which, from inherent weakness or other individual circumstances, has been unable to cope with conditions which might ordinarily be regarded as normal. In either case, the result has been the same; the artery has been obliged to fortify itself by progressive thickening of its walls, especially by a connective-tissue sclerosis of the intima and media. As a rule, although there are striking individual exceptions, when the thickening of the radial artery is unduly marked, similar changes occur in the intima of the mesenteric artery and aorta. The distribution of such changes is irregular and too often not to be determined *intra vitam*, but the unduly palpable radial artery indicates a strong possibility of their existence in some part of the body at least, and may thus reasonably be regarded as a signal of danger.

28. **Tubercle Bacilli in the Feces.**—Rosenberger describes the technic of examining the feces for the tubercle bacilli, and states that in a number of examinations no acid-fast bacillus other than the tubercle bacillus was found in the feces. The

presence of the tubercle bacillus in the feces means that active tuberculosis exists somewhere in the body. In acute miliary tuberculosis the bacillus is always present in the feces. In all cases of chronic diarrhea and in cases of general glandular involvement, the feces should be examined for tubercle bacilli. The finding of tubercle bacilli in the feces does not mean intestinal ulceration in all cases. In arrested or healed pulmonary tuberculosis no tubercle bacilli are found in the sputum or the feces. The feces should be studied for tubercle bacilli as a part of the routine examination, especially in suggestive cases and when no expectoration can be obtained.

30. **Primary Carcinoma of the Bladder.**—Brown concludes that the most frequent seat of carcinoma in the bladder and the direction of its extension are still debatable questions; that metastasis is much more frequent than is conceded by many clinicians; that a malignant growth in the bone may occur from a primary carcinoma of the bladder; that the most frequent cause of death in vesical carcinoma is a secondary affection of the ascending urinary tract, and that the diagnosis is always difficult, especially after the onset of complications.

33. **Blood Pressure Lowering Reflexes.**—Capps and Lewis detail a series of experiments made for the purpose of establishing the mechanism whereby the marked fall of arterial blood pressure with unfavorable symptoms, noted in aspirating pleural effusions, was brought about. Their experiments demonstrated the induction, under certain circumstances, of a blood pressure lowering reflex, the course of which they describe and illustrate diagrammatically. The reflex conforms to two types: (1) A reflex, cardioinhibitory type, in which the heart is slow and the pulse tracing makes violent expulsions with a great range between systolic and diastolic pressure; respirations are also usually slow and may be inhibited. This type, occurring alone, is rarely fatal. There is also (2) a vasomotor type, the pulse tracing showing a steady rapid decline of pressure, without a great difference in systolic and diastolic pressure. This type frequently terminates in death; respirations are usually shallow and may be rapid. The cardioinhibitory reflex is central. The vasomotor dilator reflex may be either central or peripheral. The authors draw from their investigations the following conclusions of import in regard to operative procedures on inflamed pleura: These types of reflexes occur also in man during operative procedures on the inflamed pleura. The cardioinhibitory type is manifested by a slow, intermittent pulse, with a great difference between systolic and diastolic pressures; the vasomotor type by a steady fall in blood pressure, without a marked difference in systolic and diastolic pressure and by a pulse that grows steadily weaker until it can not be felt. For emergency use in case of falling blood pressure and symptoms of collapse adrenalin intravenously is indicated. Atropin is of little service and may even do harm. Preventive measures come readily to mind. The instrument used in thoracentesis should not irritate the visceral pleura any more than is absolutely necessary; therefore, the trocar is preferable to the needle. The trocar should not be inserted to a greater depth than is necessary to obtain fluid. Great care should be employed during the drainage of an empyema, especially to avoid a long projection of the drainage tube inside the cavity. Swabbing the pleural surface is attended with danger. Finally, they emphasize the clinical importance of taking blood pressure readings at the beginning of and during all operations in the pleural cavity, in order to foresee, and thereby prevent, the development of a dangerous blood pressure lowering reflex.

### Journal of Nervous and Mental Disease, New York.

*December.*

34 Chronic Anesthetic Acrocyanosis with Gangrene: Its Relations to Other Diseases, Especially Erythromelalgia and Raynaud's Disease. L. F. Barker and F. J. Sladen, Baltimore.
35 *Postapoplectic Tremor. J. H. W. Rhein and C. S. Potts, Philadelphia.

35. **Postapoplectic Tremor.**—Rhein and Potts report a case presenting a tremor of the right arm resembling posthemiplegic tremor and ataxia of the arms and legs, and pathologically the presence of symmetrical lesions of the putamen. There was an area of softening in each putamen, which caused degeneration in the fasciculus of Turck on the right side. There was no degeneration in the motor fibers of the internal capsule, pons, medulla oblongata or spinal cord. The association of the tremor of the right arm and ataxia of the arms and legs with these pathologic findings is discussed, and the authors conclude: (1) The lesion in the left lenticular nucleus may have been responsible for the tremor of the right arm in this case, and the association of unilateral tumor with bilateral lesion may be explained by the fact that the lesion in the right putamen was not extensive enough to set up sufficient irritation to cause this symptom on the left side. (2) Postapopletic disturbances of motion may be due to lesions of the lenticular nucleus, the optic thalmus and the pons in the region of the superior cerebellar peduncles, and of the cerebellum, the cause being, in all instances, a disturbance of co-ordination. When the lesion is extracerebellar the cause of this disturbance is possibly an indirect result of destruction of fibers related to the cerebellum directly or indirectly through the red nucleus. (3) The ataxia in the case reported may have been indirectly of cerebellar origin.

### Bulletin of Lying-in Hospital of the City of New York.

*September.*

36 Advanced Broad-Ligament Pregnancy. R. W. Lobenstine, New York.
37 *Tumors of Ovary Complicating Pregnancy and Labor. Id.
38 *Management of Umbilical Stump. J. A. Harrar, New York.
39 Forty-seven Cases of Premature Separation of Placenta. R. W. Lobenstine and J. A. Harrar, New York.
40 *An Aid to Complete Dilatation of Cervix. J. A. Harrar, New York.

37. **Ovarian Tumor and Pregnancy.**—Lobenstine considers ovarian tumors in relation to pregnancy. He divides treatment into (a) during pregnancy; (b) during labor; and (c) during the puerperium. In regard to the first division, he advocates operative intervention as soon as convenient after diagnosis because the material mortality is less, the fetal mortality at least not greater, and the technic of operation is increased in difficulty in the latter months of pregnancy. During labor, if the tumor does not descend into the pelvis, it requires no treatment. If it presents, efforts should be made to return it, but with great gentleness. If the tumor can not be displaced and the child is alive, a vaginal ovariotomy, with subsequent delivery *per vaginam*, or a Cesarean section with ovariotomy, or an abdominal ovariotomy with delivery *per vaginam*, according to circumstances, may be done. A dead child with little dystocia may be dealt with by craniotomy and extraction gently performed; with great dystocia, an abdominal or vaginal ovariotomy is indicated and then a craniotomy. Lobenstine does not believe in puncturing the tumor if it is cystic, and does believe that in every case the abdomen should be opened at once if the cyst is ruptured during delivery. In the third division, the probability of trouble arising in the early puerperium if the tumor is not removed, either during pregnancy or later, indicates, according to this author, that early operation should be resorted to whenever possible, even if no serious symptoms supervene.

38. **The Umbilical Stump.**—Harrar describes the technic of dealing with the umbilical stump at the New York Lying-in Hospital, and insists on the following points: 1. A permanent dressing applied by the surgeon at the time of delivery, which remains undisturbed for five days. 2. The subsequent treatment to be carried on by the surgeon and not by the nurse. 3. The use of sterile spuds at subsequent dressings to avoid handling the stump. 4. The use of dry dressing whenever possible.

40. **Dilatation of the Cervix.**—Harrar insists on thorough artificial dilatation of the cervix when it shuts down on the head in breech extractions after version, when the full dilatation is questionable. He suggests, as a mechanical aid easily obtainable and readily sterilizable, the ordinary porcelain nest egg. After effecting as full dilatation as possible by either of the manual methods, the egg is pushed in ahead of the dilating hand with the finger tips. When the hand is within the uterus the egg is clenched in the fist, which is slowly withdrawn through the cervix. Operators with large hands may, of course, produce adequate dilatation without any such assistance.

**American Journal of Orthopedic Surgery, Philadelphia.**

*October.*

41 *Neoplasms and Their Relations to Orthopedic Surgery. C. F. Painter and M. H. Rogers, Boston.
42 *Mechanics of Lateral Curvature. H. O. Feiss, Cleveland.
43 *Typhoid Spine, with Especial Reference to the Deformity. T. H. Myers, New York.
44 *Case of Typhoid Spine, with Radiographic Evidence of Structural Change; Analysis of Reported Cases. S. Silver, Pittsburg, Pa.
45 *Operative Treatment of Spina Bifida. R. W. Lovett, Boston.
46 Case of Congenital Dislocation of Hip in Girl Past 12 Years of Age. Successful Reduction by Lorenz Method. J. T. Rugh, Philadelphia.
47 *Case of Acquired Coxa Valga. N. Allison, St. Louis.
48 Fetal Chondrodystrophia. E. S. Geist, Minneapolis.
49 *Use of Oil in Mobilization of Joints. W. S. Baer, Baltimore.

41. **Neoplasms.**—Painter and Rogers refer to the frequency with which new growths manifest themselves in situations where their presence may give rise to confusion in the minds of orthopedists. They consider in detail sarcomata and carcinomata, and report a series of eighteen cases showing the varieties of neoplasm that may be encountered in the experience of a chronic joint clinic, namely, angioma, myeloma, chondroma, osteoma, bone cyst, lipoma, sarcoma of various forms and carcinoma.

42. **Lateral Curvature.**—Feiss goes into the mechanics of lateral curvature, pointing out that in certain postures the bones tend to become deformed without actually doing so, and that in sufficiently long continuance of these postures something must give, according to definite tendencies or strains, which are studied in detail in regard to different conditions. The force behind these tendencies may explain actual distortions if the resistance that prevents actual change of shape loses its ratio with respect to the force brought to bear. On these assumptions, they were able to explain many deformities actually found in the pathologic specimens. Others not so explainable they believe to be due not to the stress of deformation itself, but to the laws of adaptation, when the total body structure after acquiring the original derangements of deformation had to re-equilibrate itself in its exact attitude according to the requirements of gravity.

43. **Typhoid Spine.**—In the treatment of typhoid spine Myers emphasizes the severe suffering that these patients sometimes bear, and recommends applying the plaster jacket with the patient lying down, rather than by using the suspension method. As inflammations of the lungs and pleura are among the most common complications of typhoid, he thinks that these cases should all be protected by a brace which will not oppress the chest at all, rather than by the jacket.

44. **Id.**—Silver insists that recumbency in the light of our present knowledge can no longer be considered adequate treatment, some form of fixation being indicated. Immobilization should be used earlier and more frequently. In twenty-five cases immobilized relief was afforded in all but one. He names the plaster bed, the gas-pipe frame, the plaster jacket as instances. Gibney's brace was also of benefit, which appeared to be increased by the addition of the use of adhesive plaster strapping. Counterirritation with the cautery is of value; leeches were employed twice with marked improvement; sedatives were required in almost all cases.

45. **Spina Bifida.**—Lovett emphasizes the following points: The operation by extirpation of the sac in spina bifida in the reported group of cases is followed by death in about one-third of the cases. In properly selected cases in the hands of a surgeon used to the operation the mortality probably would be somewhat smaller. There is a secondary mortality, probably at least as great as the operative mortality. Ultimate recovery is to be expected in something less than 50 per cent. of properly selected cases. Contrasted with the hopelessness of the outlook when no operation is done, it would seem justifiable to advise operation in properly selected cases.

47. **Acquired Coxa Valga.**—Allison reports a case of traumatic coxa valga in typical form. The injury sustained was unusual. None of the reported cases in the literature show such an injury. The case is interesting, in that it shows the error of development which will follow a sufficient disturbance of the relationship that exists between superincumbent weight and growth pressure. The boy having injured his acetabulum, was allowed to remain in bed during the early part of his recovery with his thigh in an abducted, externally rotated position. This occurred at the age of 5 years. It is to be presumed that the epiphysis of the head became lodged in the process of repair in the acetabular cavity, so that when the child began to get about he assumed an abducted, externally rotated position with his right thigh. Walking in this position, the strain thrown on the upper end of the femur was abnormal, in that to compensate for his abduction, his weight bearing line was transmitted directly to the long axis of the femur by tilting his trunk. This abnormal force, acting through the years of greatest bone development, produced an opening of the femoral angle of depression, and in consequence an absolute lengthening of the bone. The object of treatment was to attempt a return of the normal femoral angulation, so that as future development takes place, the bone structure and external contour of the upper femoral extremity may approach the normal. The further treatment of the case will have for its object active and passive manipulation of the hip, to increase the range of motion, and observations on the angle of depression to discover what transitions it may pass through, as development proceeds.

49. **Oil in the Mobilization of Joints.**—Baer says that injection of oil into joints under proper precautions is a harmless procedure. The joint will apparently tolerate as much as it will hold. The method is most useful in cases in which adhesions have followed some acute infectious process, or in those stiff joints classified as arthritis deformans of the infectious type. Passive motions are made with less pain when the joint contains oil. It plays some part in preventing adhesions, so that the mobility of the joint is increased more rapidly.

**American Journal of Urology, New York.**

*October.*

50 Prostatic Carcinoma. F. E. Gardner, New York.
51 *Present Status of Roentgen Ray Sterility. F. T. Brown and A. T. Osgood, New York.
52 Two Cases of Sterility in the Male. F. R. Hagner, Washington.
53 Case of Fibroadenoma in the Bladder Wall, Occurring in Fundus of Bladder. Id.

51. **Roentgen-Ray Sterility.**—Brown and Osgood report after two years on the cases mentioned in a former paper in which azoospermia was shown to have occurred as the result of long exposure to the *x*-ray. They find that some of these patients have escaped permanent injury, doubtless because of subsequent avoidance of exposure, and some whose records were then bad have since become fathers. The extent of the injury inflicted by the rays is directly proportionate to the amount of destruction of spermatogenic cells in the tubules of the testes. They describe the results in the rat of experimental subjection of the testicle to the rays and illustrate the results with photomicrographs. They repeat what was before said, that in no case has there been evidence of deterioration of sexual activity.

**The Laryngoscope, St. Louis.**

*November.*

54 Visual Disturbances Showing Causal Relation to Disease in Sphenoidal Sinuses. J. W. Murphy, Cincinnati.
55 Radiography and Transillumination in Diagnosis of Sinus Disease. J. C. Beck, Chicago.
56 Premaxillary Wings and Deviations of Septum. H. P. Mosher, Boston.
57 *Primary Melanosis of Palate. Nasobuccal Fistula of Recent Sarcomatous Origin. J. M. Roy, Montreal, Canada.
58 Suppuration in Temporal Fossa. H. Gifford, Omaha, Neb.
59 Acute Otitis Media Treated by Opsonic Method. A. C. Magruder and G. B. Webb, Colorado Springs.
60 Blindness Due to Acute Post-Ethmoidal Empyema. G. Sluder, St. Louis.
61 Infected Cholesteatoma Involving Labyrinth and Accompanied by Typical Nystagmus. G. H. Mathewson, Montreal, Canada.

57. **Primary Melanosis of Palate.**—Roy reports an unusual case presenting a primary melanosis of the palate without coexisting lesions of the eye or skin; a slow evolution of twenty years and a recent rapid sarcomatous growth.

**Southern California Practitioner, Los Angeles.**

*November.*

62 Typhoid—Its Etiology and Pathology. C. W. Anderson, Los Angeles.
63 Typhoid—Its Dietetic Treatment. J. M. King, Los Angeles.
64 Typhoid—Its General Treatment. D. Frick, Los Angeles.
65 Dairy Herd Inspection—Its Relation to Pure Milk Supply. A. E. Richel, Los Angeles.
66 Anesthesia and the Anesthetist. M. E. Hagedorn, Pasadena.

*December.*

67 Case of Chronic Hydrocephalus—Treatment by Drainage of Lateral Ventricles. H. M. Sherman, San Francisco.
68 Los Angeles County Hospital—Report on Cases and Methods of Treatment. D. C. Barber, Los Angeles.
69 *Eclampsia—Its Treatment by Veratrum and Morphin. T. G. Davis, Los Angeles.
70 The Mosquito as a Sanitary Problem. E. A. Ayres, New York.

69. **Eclampsia.**—Davis recommends chloroform as a temporary expedient when convulsions are imminent, and then the hypodermic administration of from one-third to one-half of a grain of morphin, with from ten to fifteen drops of tincture of veratrum viride from fresh root, according to the force and tension of the heart, the object being to lower arterial tension, annul the reflexes, and lessen the irritability of the nerve centers to such an extent that convulsions can not occur. This will allow time for elimination of toxins which these drugs favor, besides which the tissue changes are lessened by the quietness and relaxation; and if forcible delivery should be required, it can be effected with less shock and less anesthetic, and thus with greater safety. The administration of the drug will be followed by a slowing of the pulse to 60 or even 40; of the respirations to 14 or less. If the results are not apparent, in half an hour half the original dose is repeated.

### Alabama Medical Journal, Birmingham.

*November.*

71 Infant Feeding. W. W. Butterworth, New Orleans.
72 Curability of Epilepsy. W. P. Spratling, New York.
73 Case of Tuberculosis of Bladder. A. F. Toole, Birmingham.
74 Symptoms, Diagnosis and Treatment of Acute Articular Rheumatism. R. H. Hamrick, Pratt City.
75 Secondary or Symptomatic Anemia, Its Etiology and Pathology. L. G. McCollum, Birmingham.
76 Leucocytosis, Its Diagnostic and Prognostic Value in Disease. H. Levy, Birmingham.
77 Case of Pott's Paraplegia with Treatment and Results. E. L. Scott, Birmingham.
78 Leukemia. K. Bradford, Birmingham.
79 Diagnosis and Treatment of Local and General Suppurative Peritonitis. W. P. McAdory, Birmingham.

### California State Journal of Medicine, San Francisco.

*December.*

80 *Prophylaxis and Eradication of Plague. R. Blue, U. S. Public Health and Marine-Hospital Service.
81 Manio-Depressive Insanity and its Main Features. A. W. Hoisholt, Stockton.
82 Extragenital Chancres. R. Williams, Los Angeles.
83 Tabes as it Presents Itself to the General Practitioner. H. C. Moffit, San Francisco.
84 Surgical Treatment of Motor Anomalies of the Eye. B. F. Church, Los Angeles.
85 *Occasional Fallaciousness of Diagnosis of Enlarged Prostate Made from Digital Examination Through Rectum. G. MacGowan, Los Angeles.
86 Fatal Case of Pemphigus Beginning in Pharyngeal Mucosa. M. W. Frederick, San Francisco.
87 Myocarditis; Its Physiology, Pathology, Symptoms and Treatment. N. D. Gunn, Pacific Grove.
88 Injuries of Upper End of Femur in Adolescents and Children. J. T. Watkins, San Francisco.
89 Chronic Flatulence. A. W. Perry, San Francisco.

80. **Plague.**—Blue describes in practical detail the various measures requisite for the prophylaxis of the rat plague under three heads: (1) Destruction of rats; (2) prevention of their entrance into the habitations of man; (3) adoption of measures to prevent the shipment of infected rats into non-infected territory. As regards human plague, the prophylactic measures are early discovery and isolation of all ill with plague; daily examinations of all contacts for seven days; and their protection by immunizing doses of Yersin's serum or Haffkine's prophylactic. In plague times every municipality should pass ordinances preventing the removal of corpses until examined by a trained medical inspector. All plague corpses should be cremated or buried in metal coffins in quick lime. Necropsy should be the routine in all persons dying from a short illness, of pneumonia, typhoid or undetermined causes. Palpable glands or petechial eruptions are suspicious, and post-mortem verification is required. Undertakers should be warned against embalming bodies. Health officers should watch the vital statistics and be vigilant in all rapidly fatal diseases. An organized campaign should be instituted in plague-suspected districts. Thorough fumigation and disinfection should follow on discovery of a case of human or rat plague. Contaminated bedding and clothing should be burned. Subsequent cases occurring among non-contacts indicates an error in technic. Recurrent cases in buildings call for their vacation and destruction. If necessary, districts should be depopulated and detention camps formed. Outgoing ships should be fumigated.

85.—Published in the *American Journal of Urology*, 1907.

### Journal of the Kansas Medical Society, Columbus.

*November.*

90 Appendicitis. C. B. Stemen, Kansas City.
91 Plastic Gynecology. N. C. Speer, Osawatomie.
92 Proprietary Medicines and the Relation of Doctor and Druggist. L. A. Clary, Winfield.
93 Truths in Regard to Medical Fees. J. J. Sippy.
94 Robber Fees. W. H. Neel, Jr., Anson.
95 Night Fees. G. R. Waite, Milan.

### American Practitioner and News, Louisville, Ky.

*November.*

96 *Fused (Horse-Shoe) Kidney. B. Robinson, Chicago.
97 Hay Fever. J. M. Irwin, Louisville.
98 Relation of the Physician to Patients with Phthisical Tendency. W. E. Grant, Louisville.
99 Gangrenous Appendicitis. J. M. Sleicher, Seattle, Wash.
100 Medical Treatment of Gallstones. H. Richardson, Baltimore.

96.—This article also appeared in the *Lancet-Clinic*, June 15, and in the *Central States Medical Monitor*, September, 1907.

### Journal of the South Carolina Medical Association, Greenville.

*November.*

101 Principles on Which Use of Certain Heart Stimulants Should be Based. R. Wilson, Jr., Charleston.
102 Experience with Hyoscin Hydrobromid. G. A. Neuffer, Abbeville.
103 Diabetes Mellitus. T. G. Croft, Aiken.
104 Pneumonia. W. J. Burdell, Lugoff.
105 Pyuria—Its Detection, Significance and Treatment. A. J. Jervey, Charleston.
106 Burns and Scalds. W. A. Smith, Glendale.
107 Phthiriasis Ciliorum. C. W. Kollock, Charleston.

### Annals of Ophthalmology, St. Louis.

*July.*

108 Biographic Sketch of William Thomson. H. F. Hansell, Philadelphia.
109 Amplitude of Accommodations at Different Periods of Life and Its Relation to Eyestrain. E. Jackson, Denver.
110 Preliminary Report of Two Cases Believed to be Intraocular Tuberculosis. C. W. Cutler, New York.
111 Anisometropia. W. E. Bruner, Cleveland.
112 Stasis Hyperemia in Ophthalmology; Therapy of Ulcus Corneæ Serpens. R. Hesse, Germany.
113 Unilateral Exophthalmos in New-born Infant. W. H. Peck, Chicago.

### Virginia Medical Semi-Monthly, Richmond.

*December 13.*

114 Analysis of Last 500 Cases of Appendicitis Operated on at St. Luke's Hospital. S. McGuire, Richmond.
115 Treatment of Chronic Valvular Disease of the Heart. (To be continued). T. E. Satterthwaite, New York.
116 *The Age in Which We Live. C. Pope, Louisville.
117 Anorectal Fistula. L. Eliot, Washington.
118 Gastric vs. Test-Tube Digestion. J. T. Graham, Wyethville.
119 Blood Pressure. J. G. Nelson, Richmond.

*December 27.*

120 Rosacea. J. V. Shoemaker, Philadelphia.
121 Cases of Head Injury with Operation. H. S. MacLean, Richmond.
122 Treatment of Chronic Valvular Disease of the Heart. (Concluded.) T. E. Satterthwaite, New York.
123 Early Recognition of Tuberculosis. A. B. Greiner, Rural Retreat.
124 Four Decades of American Surgery. A. Vander Veer, Albany.

116.—This article was published in the *Lancet-Clinic*, Nov. 16, 1907, and in the *Medical Fortnightly*, Nov. 27, 1907.

### Indiana Medical Journal, Indianapolis.

*December.*

125 Home Treatment of Tuberculosis. F. A. Tucker, Noblesville.
126 Trachoma. F. C. Heath, Indianapolis.
127 Effects of Lascivious Conversations, Books and Companions in the Causation of Sexual Excesses. A. F. Sterne, Indianapolis.
128 Pigmented Nevus. J. V. Shoemaker, Philadelphia.
129 Points in Treatment of Acute or Chronic Suppuration of the Maxillary Antrum. J. J. Kyle, Indianapolis.
130 Plastic Operations for Complete Loss of Scrotum. J. A. McDonald, Indianapolis.

### Maryland Medical Journal, Baltimore.

*December.*

131 Report of the Maryland State Sanitarium. H. W. Buckler, Baltimore.
132 Present Status of Anti-Tuberculosis Movement in Maryland. J. S. Fulton, Baltimore.
133 Medical Inspection of Public Schools of Baltimore. J. H. Pleasants, Baltimore.
134 Partial Analysis of Cases of Typhoid in 1906. C. H. Jones, Baltimore.

### Columbus Medical Journal.

*December.*

135 Influenza—History and Etiology. L. M. Lisle, Columbus.
136 Influenza—Pathology, Diagnosis and Prognosis. J. J. Coons, Columbus.
137 Influenza—Treatment. T. W. Rankin, Columbus.
138 Influence of Weather Conditions on Infantile Mortality. I. Kay, Springfield.
139 Inflammation. J. U. Barnhill, Columbus.

### Detroit Medical Journal.

*December.*

140 How Far Do Homeopathic and Other Physicians Agree and How Far Can They Agree? R. C. Cabot, Boston.
141 The Homeopathic School. H. Wilson, Detroit.
142 Some Things Seen in Germany. E. Amberg, Detroit.
143 Five Case of Trichiniasis. G. L. Kiefer, Detroit.

### Vermont Medical Monthly, Burlington.

*December.*

144 The Physician as a Citizen. E. C. Mower.
145 Diphtheria and Its Treatment. J. A. E. Lanouette, Manchester, N. H.
146 Vermont and Its Reciprocal Relations. W. S. Nay.
147 Puerperal Sepsis. J. C. Breitling, Luneburg.
148 Some Difficult Diagnoses Between Medical and Surgical Conditions. J. M. Gile, Hanover, N. H.

### Journal of the New Mexico Medical Society, Albuquerque.

*December.*

149 Interesting Cases of Tumor of the Thyroid. G. C. Bryan, Alamogordo.
150 Serum Treatment of Pericardial Effusion. J. B. Barbee.
151 Heart Block at Ninety-One. C. F. Beeson, Roswell.

### Montreal Medical Journal.

*December.*

152 Carcinoma of the Breast. G. E. Armstrong, Montreal.
153 Bacteriemia—Its Diagnosis, and Its Diagnostic and Prognostic Value. F. B. Gurd, Montreal.
154 Irritable Heart. W. S. Morrow, Montreal.
155 Case of Hypertrophy of the Prostate—Suprapubic Prostatectomy. N. E. Mackay, Halifax, N. S.
156 Value of Bacteriologic Examination in Conjunctivitis. H. McKee.

### Archives of Ophthalmology, New York.

*November.*

157 Report on Eyeball Injuries by Iron Foreign Bodies at New York Ophthalmic and Aural Institute, New York City. H. Knapp and L. Stoll, New York.
158 Cases of Foreign Bodies in the Eye. J. E. Weeks, New York.
159 Disease of Tarsus and Lid Margin in Trachoma. E. Raehlmann, Weimar, Germany.
160 Optical Significance of Accommodative Pupillary Movements. J. Weidlich, Elbogen, Germany.
161 Intrabulbar Pseudotumors in Children. Stoewer, Witten, Germany.
162 Old and Modern Bifocal Spectacles. H. Knapp, New York.

*December.*

163 Otalgia Considered as Affection of Sensory System of Seventh Cranial Nerve. J. R. Hunt, New York.
164 Deafness in Course of Acute Osteomyelitis and of Septic Processes in General. Siebenmann, Basel, Germany.
165 Fatal Case of Sinus Thrombosis After Chronic Purulent Otitis Complicated with Cholesteatoma. A. Knapp, New York.
166 Two Fatal Cases of Brain Abscess. J. J. Thomson, New York.
167 Prognosis of Operative Opening of Purulent Labyrinth. R. Freytag, Breslau, Germany.
168 Deafness of New-born; Disturbance of Sound Conducting Apparatus of Ear. W. Koellreutter.

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## FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

### British Medical Journal, London.

*December 21.*

1 *Tuberculosis in Childhood and Its Relation to Milk. J. McCaw.
2 *Has a Purin-Free Dietary Any Special Therapeutic Value? C. Watson.
3 *Case of Cerebral Tumor Associated with Subjective Sensations of Smell. H. C. Thomson.
4 Medical Practitioners and Public Health. T. Fowler.
5 Plea for the Study of Bacteriology by the General Practitioner. J. A. Jones.
6 *Cremation. J. W. Riley.
7 Protection of India from Invasion by Plague. J. A. Thompson.
8 Primary Sarcoma of Appendix. T. Carwardine.
9 Case of Septicemia with Interesting Reactions to Treatment and Recovery. C. F. Fothergill.
10 Postmortem Statistics of Middle-Ear Disease in Young Children. J. Miller.
11 Blood Films, with Special Reference to Presence of Hemoconia. F. Porter.
12 Method of Estimating Coagulation Time. C. Mercier.
13 Albuminuria from a Life Insurance Point of View. R. Wilkinson.
14 Poisoning by Mercuric Potassium Iodid. S. W. Davies.
15 Bone Abscess Due to Bacillus Allied to B. Paratyphosus. F. G. Bushnell.
16 Spectacles in Ametropia After Removal of the Lens. A. S. Percival.
17 *Vagitus Uterinus. H. E. A. Washbourn.

1. **Tuberculosis.**—This article appeared in the *Medical Press and Circular*, Nov. 27, 1907, and was abstracted in THE JOURNAL, Jan. 4, 1908, page 78.

2. **Purin-Free Dietary.**—Watson discusses the nature of purins in the food, in the tissues and in the urine; their physiology and pathology, and the therapeutics of a purin-free diet. He concludes that there is no special therapeutic effect in a purin-free diet and that clinical experience agrees with laboratory teaching in showing that in gout it is not so much a disturbance of purin metabolism as a perverted function of one or more organs of the body that is of pathogenic moment.

3. **Cerebral Tumor with Subjective Odors.**—Thomson reports a case of cerebral tumor in which the repetition of sensations of smell justified the assumption that the tumor was seated in the region of the uncinate gyrus—that is, at the anterior extremity of the temporosphenoidal lobe. This was exposed in two stages in operations at intervals of a week. No tumor was visible on the outer surface, but the tension was shown by the bulging of brain substance. Recovery from operation ensued and the optic neuritis subsided, the discs in a few weeks showing only traces of infiltration. The patient remained well for over six months, but recently became worse, and the effects of the growth are again perceptible.

6. **Cremation.**—Riley considers the subject of cremation historically, legally, hygienically, medicolegally, and from the theological standpoint, and concludes that there is economy, safety and security in it, no offense to the living, nothing out of conformity with the solemn reverence due to the majesty of death, no violation of divine law. While it does upset old ideas, traditions and thoughts, it must inevitably prevail in the end.

17. **Vagitus Uterinus.**—Washbourn reports a case in which distinct and undoubted cries were noticed, both by himself and the two women in attendance, from a fetus which had not begun its journey through the pelvis, and further was delivered alive, though injured, by severe instrumental effort an hour later.

### Lancet, London.

*December 21.*

18 *Experiences of Intracranial Surgery. C. A. Ballance.
19 Gastric Ecchymosis, Gastrostaxis and Simple Gastric Ulcer; Their Possible Relations to Hemorrhagins and Mucolysins. E. C. Hort.
20 Three Cases of Intestinal Obstruction. R. D. Mothersole.
21 Case of Complete Gastrectomy. B. G. A. Moynihan.
22 *Tuberculin Ocular Reaction of Calmette. J. W. H. Eyre, B. H. Wedd and A. F. Hertz.
23 Bone Abscess Caused by an Intermediate Bacillus Allied to to Bacillus Paratyphosus. F. G. Bushnell.
24 *After-Treatment of Cases of Suprapubic Cystotomy. H. Irving.
25 Poisoning by Potassium Bichromate. A. M. Gossage.
26 *Status Lymphaticus and Administration of Anesthetics. H. H. Rubra and A. C. Brown.
27 Bilateral Ovarian Dermoid Tumor Associated with Pregnancy. M. Campbell.
28 *Supernumerary Mammæ. A. W. Hayles.

18. **Intracranial Surgery.**—Ballance points out that the surgery of this region does not differ in any fundamental manner from that of other regions. Most intracranial operations are undertaken to relieve pressure or to remove a source of infection. The diagnosis of intracranial disease is ordinarily far more complex than that of intra-abdominal disease. The maxim that diagnosis must precede operation is true only of those diseases the signs, symptoms and course of which are fully comprehended. In other cases, and when danger attends delay, operation on a provisional diagnosis saves many lives and perfects the diagnostic art. Just as the abdomen is sometimes opened with the expectation of finding a grave condition and nothing abnormal is found though a symptomatic cure may result, so operation for expected intracranial tumor relieves intracranial pressure even though no tumor be there. The more common conditions calling for intracranial intervention are: 1, Diseased or displaced bone; 2, effused blood (recent or of old standing); 3, meningeal inflammation; 4, cerebral abscess; 5, epileptiform neuralgia of the fifth nerve; 6, tumors, including cysts and infective granulomata. Ballance considers all these in detail. The operations now used are: 1, Removal of localized tumors; 2, partial removal of tumors from which a temporary or lasting benefit is sometimes obtained; 3, drainage of malignant and simple cysts, and 4, decompres-

sive operations. The symptoms pointing to tumor are the following, though they all and almost any combination of them may arise from causes other than tumor: 1, Certain vague symptoms, the evidence of disturbance of the normal harmonious and correlated functional activity of the various parts of the brain, such as changes of the disposition or impairment of mental power; 2, symptoms of increased intracranial pressure, headache, vomiting, optic neuritis, slow pulse and torpor, and 3, symptoms due to irritation or paralysis of particular nerve centers, or groups of nerve centers, the so-called focal symptoms, such as paralysis and disturbances of sensation.

22. **Tuberculin Ocular Reaction.**—Eyre, Wedd and Hertz report the result of their investigations of the tuberculin ocular reaction of Calmette in 138 individuals which have led them to form a distinctly favorable opinion of the value of the test. They review the communications of continental observers on the subject and tabulate their own results. Of the 138 cases, 63 yielded a positive reaction and 75 a negative reaction. In no cases did a healthy adult yield a positive reaction, while *per contra* every case of admitted tuberculosis did give a reaction. Of 25 cases of lung disease other than phthisis 5 were positive and 20 negative. Of 83 cases of diseases other than of the lungs 45 were positive and 38 negative. The larger number of the positive cases in the last group were clinically diagnosed as tuberculosis. The authors believe that the reaction will be of value in indicating when therapeutic injections may safely be discontinued. The test causes movements of the tuberculo-opsonic index similar to those following a subcutaneous injection. The negative phase is usually well marked and sometimes lengthy.

24. **Suprapubic Cystotomy.**—Irving describes an apparatus of his own devising to take the place of the bulky, expensive and uncomfortable dressing commonly used. His appliance keeps the patient dry from the time of operation until the wound is healed, is simple of application, and lightens the work of both nurses and surgeons. Essentially it consists of a celluloid cap retained by elastic pressure over the suprapubic wound and possessing outlet tubes for the escape of urine.

26. **Status Lymphaticus and Anesthetics.**—Rubra and Brown report the case of a boy of 17, undergoing the submucous operation for resection of the nasal septum. He was given 5 minims of a 5 per cent. solution of cocain and 5 minims of a 1 to 1,000 solution of adrenalin. The half upright posture was used. Equal parts of chloroform and ether were then administered through a Junker inhaler with a face piece. Ether was used because the anesthetist thought the patient not likely to become congested in the nose, but to be one in whom chloroform would be apt to cause cardiac failure. Anesthesia was light; the pulse and respirations were normal; pupils reacting to light and contracted; a slight conjunctival reflex was present. It was presently noticed that the patient was pale, with a blue congested patch on the cheek; breathing was deep and regular, possibly a trifle quickened; the radial pulse could not be felt. In spite of strychnin, oxygen, galvanism, artificial respiration, etc., and after the anesthetic had been discontinued, the pupils dilated and became fixed and respiration failed, and death ensued.

28. **Supernumerary Mammæ.**—Hayles reports the case of a woman aged 32 who had had from childhood a swelling under each arm. When she became pregnant the swellings increased in size, became painful and interfered with the use of the arms. Three years later the same conditions recurred during another pregnancy and the tumors were removed. Microscopically they showed the structure of a secreting gland. The natural breasts were abnormally large.

### Medical Press and Circular, London.

*December 18.*

29 *Fractures at the Wrist. D. Power.
30 Value of Spinal Analgesia in Protecting Patient from Surgical Shock. E. C. Ryall.
31 *Treatment of Syphilis in the Light of Results of Recent Investigations. E. Lesser.
32 New Medical Service for the Territorial Army. A. Keogh.

29. **Fractures of the Wrist.**—Power points out that recent advances in physics and surgery have added greatly to our power of diagnosing fractures; and the group of fractures at the wrist, formerly all classed together under the name of Colles' fracture, can be separated into groups as in the following table:

| | | |
|---|---|---|
| Radius | Separated lower epiphysis. | |
| | Unimpacted fracture. | |
| | Impacted fracture. Simple. | Colles' fracture. |
| | Lower fragment comminuted. | |
| | Oblique fracture through articular end without comminution. | |
| | Styloid process detached. | |
| Ulna | Separated lower epiphysis. | |
| | Fracture of shaft in lower third. | |
| | Styloid process detached. | |
| Scaphoid | Simple fracture. | |
| | Fracture with dislocation of one fragment. | |
| Radius and Ulna | Transverse Fracture. | |
| | Colles' fracture with styloid process of ulna torn off. | |
| Radius and Scaphoid. | Colles' fracture with fractured scaphoid. | |
| Ulna and Scaphoid. | Fracture of Scaphoid with tearing off of styloid process of ulna. | |

He describes instances of several forms, with radiographs, which indicate how complex such fractures frequently are and how unsatisfactory a result is likely to follow in a routine diagnosis simply of "Colles' fracture" or "sprain." Every such injury should be radiographed in more than one position. Broadly speaking, the prognosis is good in simple fractures at the wrist when the styloid process of the radius or ulna is not torn off, or when the fracture of either or both bones is simple and transverse. In Colles' fracture with impaction it is fairly good, even when the lower fragment is comminuted, but in fracture of the scaphoid it is bad unless the injury is recognized at the beginning and treated accordingly. In treatment, the impacted end of a Colles' fracture should always be separated before a splint is applied. He recommends Carr's splint which, among other advantages, has that of being easy to extemporize with a straight splint to which a piece of broom handle is screwed obliquely. It will not serve, however, for fracture of the scaphoid. This condition is frequently mistaken for a sprain, when it occurs as the only injury of the wrist, which may account for some of the bad results. When a fragment of the scaphoid is dislocated, or will not unite, it should be removed through a small incision on the dorsum of the wrist parallel to and along the inner side of the tendon of the extensor carpi radialis longior.

31. **Syphilis.**—In the light of recent investigations into the communicability of syphilis and of the discovery of the *Spirochæta pallida* as the cause, Lesser considers the question of the excision of the primary sore, the subsequent treatment and the general treatment. Histologic examinations and animal experiments are but little encouraging as regards any good prospects from excision. Specific treatment should be begun immediately after excision (if performed) if the spirochetes are found, as one can not be sure that all virus has been removed by the excision. By demonstration of the spirochetes it is possible to diagnose a primary sore with certainty, so there need no longer be fear of masking the symptoms by early resort to specific treatment.

### Australasian Medical Gazette, Sydney.

*November 20.*

33 *Mode of Spread and Prevention of Plague in Australia. J. A. Thompson.
34 *Method of Dealing with the Abdominal Wound in Order to Prevent Postoperative Hernia. J. M. Y. Stewart.
35 Case of Periodic Fever with Marked Lymphocytosis. S. Gillies, D. A. Welsh and Chapman.
36 Radical Treatment of Sliding Hernia. T. Fiaschi.
37 Ten Cases of Stovain Spinal Anesthesia. C. S. Willis and D. Wallace.
38 *Ionic Medication. L. H. Harris.
39 Recent Development of Radical Mastoid Operation, with Remarks on Prophylaxis. J. L. Gibson.

33. **Plague.**—Thompson details in a logical fashion the argument presented in the Report to Section Five of the Fourteenth International Congress of Hygiene and Demography whereby were arrived at the fundamental data formulated as the result of experimental and clinical investigation in Sydney: 1. The epidemic spread of plague occurs independently of communication of the infection from the sick, and consequently by means external to man and independent of his agency as subject of the disease. 2. The plague rat is harmless to man, but, on the other hand, it is essential to the causation of epidemics and, consequently, there must be some intermediary carrier between the rat and man. 3. The positive identifica-

tion of the flea as an intermediary carrier. Prevention of epidemic plague consequently lies in habitually maintaining a distance between the rat and man, for measures directed against the flea can have scope only in special circumstances. The attempt at rat extermination is futile with any measures at present at our command. In Tokyo the effort has been more consistently and thoroughly made than anywhere else, and yet it is hardly possible to recognize any impression at all as having been made on the rat tribe as a whole. Thompson's experience in Sydney coincides with this. Occasions will arise from time to time on which effort may be directed to destruction of rats known to be present; but as a rule infected neighborhoods must be dealt with in a more general way, by scavenging and destruction of accumulations or places in which rats have found or may find harborage, and especially by storing food and food waste so that rats can not reach them. The difficulty of arresting rat plague is in direct ratio to the bad construction of wharves, quays and the buildings on and near them. The danger to man from plague is everywhere directly proportionate to the accessibility of the interior of buildings to rats, though not entirely absent outside them. All other measures, therefore, must be considered as subsidiary to reconstruction of ill-built wharves, stores and warehouses, and to such repair and special fittings of inhabited houses as will keep rats outside them.

34. **The Abdominal Wound.**—Stewart's method of dealing with the abdominal wound so as to prevent postoperative hernia is as follows: The incision is made in the median line. This is carried down to, but not through, the junction of the sheaths of the recti at the linea alba. It is then optional which sheath is exposed. Any bleeding is controlled in the usual way, by pressure or tying, and the sheath is then opened with the point of the knife, held with the cutting edge upward, so as to avoid lacerating the muscle beneath. This incision is made about three-eighths of an inch from the linea alba, and extends from top to bottom of the wound, or nearly so. The edge nearer to the linea alba is caught by the dissecting forceps, and with the handle of the knife this portion of the sheath is raised by blunt dissection from the portion of the muscle lying immediately below it until the linea alba is reached from top to bottom of the incision. The inner edge of the exposed rectus is then separated from the point of union of the superficial and deep sheaths, and the muscle is drawn away from the middle line, exposing the subperitoneal fat, residue of deep sheath and peritoneum. The peritoneum is then opened in the same place as was the superficial sheath and the operation is proceeded with. This retracting of the rectus muscle outward from the middle line in no way injures it, as the blood supply and nerves enter at its outer half; it is, therefore, seldom necessary to tie any of the muscular vessels. Having completed the rest of the operation, and carefully removed all sponges, instruments, etc., from the cavity of the peritoneum, the method of closing the parietal wound is as follows: The cut edges of the peritoneum are held together and a round-bodied or a trocar-pointed curved needle, threaded with fairly thick catgut (No. 3), is passed through at the top or bottom, as most convenient, and tied, and the opening is closed by a continuous quilted stitch, to oppose the serous surfaces of the peritoneum to each other, and at the same time have no foreign material exposed on the intestinal side of the peritoneum, which might possibly attract the omentum. When this is completed the rectus muscle is allowed to return to its place, and it completely covers the line of closure in the peritoneum. The superficial sheath of the rectus is then closed by a continuous or interrupted catgut suture, and if there is a deep layer of fat between the sheath and the skin, a third line of catgut suture can be used to bring the fat surfaces together. The skin may be brought together either by interrupted silkworm, horsehair, subcuticular catgut (Kelly's) continuous overstitch, or by Michel's skin clips and the usual dry dressings applied. Some surgeons use long strips of adhesive plaster to steady the abdominal wall; but, except in very fat patients with loose flaccid belly, Stewart has not found it necessary, and it certainly does not add to the patient's comfort if put on sufficiently tightly to be of any real use.

38. **Ionic Medication.**—Harris sums up his experience, which is, however, limited, of this method, by stating that in cases of simple ulceration it appears to be a rational form of treatment, while in cases of rodent ulcer the action seems to be too localized and too superficial to have a lasting effect. In the six months that have elapsed since the writing of his paper all the patients mentioned have again come under notice. In the specific case the patient has remained well. Of the rodent ulcers several are threatening extension and one is extending. Harris considers ionic treatment in such cases not so reliable as the *x*-ray.

### Journal of Tropical Medicine and Hygiene, London.

*November 15.*

40 *Transmission of Yaws by Ticks. E. E. Modder.
41 Hill Stations and Other Health Resorts in the British Tropics. F. M. Sandwith.

40. **Ticks as Transmitters of Yaws.**—Modder adduces various reasons and observations to show that ticks, and especially the Argas tick, are a medium of transmission of the yaw poison.

### Presse Médicale, Paris.

*December 7, XV, No. 99, pp. 797-804.*

42 *Is the Ocular Reaction to Tuberculin Free from Danger for the Eye? (L'ophthalmo-réaction.) F. de Lapersonne.
43 Spengler's Method of Vaccination Against Tuberculosis. A. Bergeron.
44 Medical Treatment of Gastric Ulcer. (Ulcère de l'estomac.) G. Linossier.

*December 11, No. 100, pp. 805-812.*

45 Roentgen Examination of the Stomach. (Examen de quelques estomacs à l'aide des rayons de Roentgen.) T. Tuffier and P. Aubourg.
46 Indications and Restrictions for Deprivation of Salt in Chronic Nephritis. (Déchloruration dans le traitement du mal de Bright.) A. Martinet.

42. **Is the Ocular Reaction to Tuberculin Dangerous for the Eye?**—De Lapersonne has been investigating the cases that have been reported of alleged injury to the eye from diagnostic instillation of tuberculin. The complications always took the form of an ulcerovascular keratitis, and with one exception were only observed in pre-existing lesions of the cornea, and vision was not impaired. He has collected six cases of this kind. In two other cases the intraocular complications were more serious, entailing iridocyclitis; these patients were elderly. His conclusions from his study of these cases are that Calmette's "ophthalmo-reaction" is harmless for the eye, but that the complications exceptionally observed impose caution in its application, although no absolutely certain direct connection between the accidents observed and the instillations can be demonstrated in any instance. It is wise never to instil the tuberculin until after a thorough examination of both eyes. It is also best to refrain from applying this method in differentiation of lesions of the eyeball, deep or superficial, although it might be used in the diagnosis of affections of the lids, orbit and lachrymal passages. The reaction is generally most pronounced in children. In the elderly so many factors may intervene that the result is liable to be misleading, while, if complications do occur, they may take a long time to subside. The complications which he has been studying did not manifest themselves, nor did the reaction, until from ten to twenty days after the instillation. It seems almost as if some local or general intercurrent infection might be able to rearouse or to maintain the reaction in a tuberculous individual.

### Semaine Médicale, Paris.

*December 11, XXVII, No. 50, pp. 589-600.*

47 *Intestinal Arteriosclerosis. L. Cheinisse.

*December 18, No. 51, pp. 601-612.*

48 Case of Adams-Stokes Syndrome without Heart Block. R. Lepine.

47. **Intestinal Arteriosclerosis.**—Cheinisse reviews the scanty literature on arteriosclerotic changes in the intestinal vessels and the symptoms which they elicit. Abdominal pain, in persons past 40, occurring in paroxysms, generally after physical exertion or emotional stress, should suggest intestinal arteriosclerosis, he states, especially if the pain comes on when reclining. The mechanism of the disturbance is similar to that of intermittent limping—the ischemia of the intestinal vessels causing painful cramp with transient paralysis of some seg-

ment of the intestine and consecutive meteorism. The trouble has been called "intermittent ischemic dysperistalsis" and "intermittent arteriosclerotic intestinal dyspragia." Dubious cases may be differentiated by giving tincture of strophanthus, from five to eight drops three times a day. Narcotics and other measures to soothe the pain are generally useless, but drugs that control angina pectoris may prove effectual, especially strophanthus and theobromin. Jaquet has reported excellent results from the use of potassium iodid or potassium nitrate combined with sodium nitrite, the combination recommended by Sir Lauder Brunton for chronic arterial hypertension.

### Berliner klinische Wochenschrift.

*December 2, XLIV, No. 48, pp. 1531-1566.*

49 Color Photography in Medicine. (Das Lumière'sche Verfahren der Farbenphotographie im Dienste der Medizin.) C. Benda.
50 Determination of Antigens by the Fixation of Complement Method. (Nachweis der Antigene mittels der Komplementfixationsmethode.) H. Braun.
51 Artificial Feeding of Infants. (Künstliche Ernährung der Säuglinge.) L. Langstein.
52 Dispensaries and Milk Depots for Infants. (Säuglingsfürsorge.) T. Escherich.
53 *Hydrochloric Acid Treatment of Gout. (Rückblick auf die 5 jährigen Beobachtungen bei der Salzsäure Therapie der Gicht.) Falkenstein.
54 Three Cases of Instrumental Perforation of Uterus in Curetting After Abortion. E. G. Orthmann.
55 Secretion of Gastric Juice During Rectal Alimentation. (Magensaftsekretion bei Rektalernährung.) F. Umber. Id. Michael.

*December 9, No. 49, pp. 1567-1598.*

56 Hysterical Pseudotetany with Peculiar Vasomotor Disturbances. A. Westphal.
57 Antibodies in Syphilis, Tabes and Paralysis. (Antikörperbefunde bei Lues, Tabes und Paralyse.) E. Weil and H. Braun.
58 Formation of Pigment Under Action of Light. (Lichtpigment.) A. Buschke and P. Mulzer.
59 Traumatic Epithelial Cysts. B. Chajes.
60 Dysentery from Ciliated Parasites. (Ciliatendysenterie.) Rheindorf.
61 *Acute Affection of the Thyroid from Iodin Intoxication. (Thyreoidaerkrankung durch Iodintoxikation.) E. Warschauer.
62 Treatment of Tuberculosis with Marmorek's Serum. H. M. Hymans and L. P. Daniels.
63 Medical Certificates to Exempt Persons from Witness Service, Imprisonment, etc. (Haft- und Terminsfähigkeit.) H. Marx.

*December 16, No. 50, pp. 1599-1630.*

64 *Serum Diagnosis of Syphilis. (Serodiagnostik der Syphilis.) A. Wassermann.
65 Experimental Study of Malignant Tumors. (Morphologie und Biologie bösartiger Tumoren.) C. Lewin.
66 Thiosinamin in Treatment of Perigastritic Adhesions. C. Michael.
67 Permanent Cure Under Roentgen Exposures of Excessive Sweating of the Hands. (Dauerheilung der Schweisshände durch Röntgen.) Kromayer.
68 Congenital Constriction of the Urethra. (Verengerungen der Harnröhre.) A. Hock.
69 Ultramicroscopic Study of Human Spermatic Fluid. (Menschlicher Sperma bei Dunkelfeldbeleuchtung). C. Posner.

53. **Hydrochloric Acid in Gout.**—Falkenstein here reviews his five years of experience with hydrochloric acid in the treatment of gout. He states that he has been taking from 50 to 60 drops of concentrated hydrochloric acid every day for more than five years, and some of his patients for nearly as long. The good action and harmlessness of such large doses of hydrochloric acid are probably due, he asserts, to the neutralizing of the acid by the alkalies in the food and beverages. This assumption is confirmed by the absence of irritation of the intestines, shown by the lack of diarrhea. He presents evidence to sustain his theory that gout is the result of an inherited insufficiency of the gastric glands in the fundus, the logical treatment of which is to supply the lacking hydrochloric acid from day to day and year to year. Among the testimony he cites are the deficiency of hydrochloric acid in the stomachs of the gouty, and Silbergleit's announcement that in a long series of experiments on animals the formation of urates in artificially induced foci of gout was regularly prevented by systematic administration of hydrochloric acid, while under alkalies the urates were as regularly deposited. He affirms that the deficiency of hydrochloric acid is primary in gout while it is secondary in all other conditions. The hydrochloric acid is not able to arrest an attack of gout—it merely corrects the general tendency to gout, and hence must be taken all through life, as there is little hope of the congenitally defective stomach glands becoming capable of normal functioning. In his experience with 390 gouty patients the best results were attained in those in whom the disease was of comparatively recent development. In the old, chronic cases the general health is improved, the course of the disease is arrested and the patients are relieved more or less of their pains, while danger of involvement of internal organs is averted. Attacks of pain may still recur, but are far less severe, as a rule. A small number of patients state that they experienced no benefit and that the disease is progressing, but the physician, even in these cases, can see evidences of benefit.

61. **Acute Iodid Poisoning Affecting the Thyroid.**—Warschauer's patient was a robust woman of 28, free from goiter, who was treated with mercurial inunctions and potassium iodid for chronic eczema of the leg on the presumptive diagnosis of a syphilitic etiology. Under this treatment the thyroid gland became enlarged, and other symptoms suggested myxedema, such as dryness of the skin and falling out of the hair, accompanied by rapid emaciation, palpitations, insomnia, tremor, pigmentation, enlargement of the glands, diarrhea and occasional delirium, the syndrome suggesting also exophthalmic goiter in some respects. No improvement was apparent after suspension of the iodid until thyroid treatment was instituted, supplemented by sodium phosphate, when the symptoms rapidly subsided to complete recovery by the end of the fourth month. About 200 thyroid tablets had been taken, each representing 0.3 gm. (5 grains). At first the thyroid treatment was not tolerated, the heart reacting dangerously to it; arsenic was then tried, but without benefit, the emaciation progressing until the patient had lost 60 pounds in seven weeks and was totally bedridden, with swollen face and feet, skin flaking off, otorrhea and decubitus. The thyroid tablets were then given in fractional doses as a last resort, and within a week marked benefit was apparent.

64. **Serum Diagnosis of Syphilis.**—Wassermann states that more than a thousand persons have been tested, with positive results in the overwhelming majority of syphilitics, and invariably negative results in the non-syphilitic. In his own latest series 156 non-syphilitics gave a negative reaction in every case, while 74 per cent. of 108 patients suspected of syphilis responded positively and 79 per cent. of 43 tabetics. Tests of the serum from 100 ophthalmic patients gave similar results, differentiating syphilitic and tuberculous processes in the eyes, the ultimate course under treatment confirming the findings of the test in every instance. The test is based on the specific fixation of the complement and consequent arrest of hemolysis when the suspected serum or cerebrospinal fluid is mixed with extracts of syphilitic organs. The findings of the test in syphilis are a beautiful example of the manner in which empiric observation leads the way and science later supplies the theoretical foundation, previously lacking. Wassermann states that the test has given positive results in 80 per cent. of the cases of progressive paralysis examined in various clinics. His latest research has shown that the suspected serum gives an approximately specific reaction when mixed with pure lecithin instead of with extract of organs from syphilitic fetuses, with which the test has hitherto been carried out. He thinks that the prospects are encouraging for the simplification of the test in this way, substituting some chemically pure substance, such as lecithin, for the organ extracts. It is possible, also, he says, that further progress may be realized along the line of a precipitation reaction. [Complete details in regard to the technic and history of the test will be found —in English—in J. C. Meakin's article in the *Johns Hopkins Bulletin*, July, 1907.—ED.]

### Centralblatt für Chirurgie, Leipsic.

*November 30, XXXIV, No. 48, pp. 1393-1416.*

70 Removal of Malignant Tumors in Tonsillar Region. (Exstirpation maligner Geschwülste der Tonsillargegend.) P. Clairmont.

*December 7, No. 49, pp. 1417-1440.*

71 *Local Anesthesia in Fractures. G. Lerda.

*December 14, No. 50, pp. 1441-1472.*

72 Technic of Billroth's First Method of Resection. E. Moser.
73 Experimental Research on Anastomoses for the Kidney. (Experimentelles zur Anastomosenerzeugung für die Niere.) S. S. Girgolaff.
74 Washstand Arranged for Automatic Spirit of Soap Supply. (Praktische Winke zur Seifenspiritusdesinfektion.) Linnartz (Cologne).

71. **Local Anesthesia for Fractures.**—Lerda states that during the last two years extensive use has been made of local anesthesia for fractures in Isnardi's service at Turin, where he is assistant. He applied this technic in thirty cases before reduction of the fracture and has never observed the slightest inconvenience. He uses a long, strong needle and injects the anesthetic mixture at various points, between the stumps and tangential to them, so that the entire focus of the fracture, the bone marrow, periosteum and surrounding tissue become impregnated with the anesthetic. He adds a drop of one per thousand solution of adrenalin to each c.c. of a .5 per cent. solution of cocain. Sometimes as much as 0.08 gm. of cocain (about 1 grain) was injected without appreciable by-effects. The contraction of the vessels aids in preventing hematoma at the point. The anesthesia is generally complete in about eight minutes. Not only is the pain abolished, but the fracture can be reduced much more perfectly, attaining results otherwise impossible without general anesthesia.

## Centralblatt für Gynäkologie, Leipsic.

*November 30, XXXI, No. 48, pp. 1497-1528.*

75 *Etiology of Uncontrollable Vomiting of Pregnancy (Hyperemesis gravidarum.) G. Winter.
76 Failure of Soluble Rubber Tissue to Protect Nipples. (Warzenschutz durch Gaudanin.) Riemann.
77 Nerves in the Umbilical Cord and Placenta. (Nerven in der Nabelschnur und der Placenta.) G. Fossati.

*December 7, No. 49, pp. 1529-1552.*

78 *Prevention of Brachial Paralysis After Operations in Trendelenburg Position. (Lähmungen im Gebiete des Plexus brachialis.) A. Horst.
79 *Suprarenal Treatment of Osteomalacia. (Behandlung der Osteomalakie mit Nebennierenpräparaten.) E. Pupnel.
80 History of Gloves in Surgery, etc. (Handschuhfrage.) L. Conitzer.

*December 14, No. 50, pp. 1553-1576.*

81 High Forceps with Face Presentation. (Hohe Zange bei Gesichtslage.) R. Jolly.
82 *Suprarenal Treatment of Osteomalacia. (Adrenalinbehandlung der Osteomalakie.) M. Neu.
83 *Prophylaxis of Pelvic Deformity by Suprarenal Treatment. (Prophylaxe der Beckendifformitäten infolge von Rachitis.) L. M. Bossi.
84 Cystoscopic Findings in Vesicointestinal Fistula. (Blasen-Darmfistel.) A. Westhoff.

75. **Origin of Uncontrollable Vomiting of Pregnancy.**—Winter reports the autopsy findings in a case of fatal hyperemesis and deduces from them that the uncontrollable vomiting of pregnancy is at first merely a reflex neurosis. If it can not be conquered during this stage, the neurosis injures the functioning of the liver and kidneys, the result of which is retention of pregnancy products and eventual fatal intoxication. The prosector, knowing nothing of the clinical diagnosis, reported the findings as suggestive of intoxication, calling attention to the fatty degeneration of the central parts of the liver acini and kidney epithelium, with ecchymoses. The symptoms had been irregular pulse and mental disturbances, mostly of a maniacal nature, with tardy albuminuria and slight jaundice with fever. The mental disturbances noted early had subsided somewhat under the influence of diuretics. During the first, the neurotic, stage, he says, repose and all the other measures for reducing the excitability of the nerves should be tried, with suggestion, removal of the patient, placebos, etc. During this stage it is extremely important to supply food, and especially water, in abundance to keep the liver and kidneys working normally. The water can, perhaps, best be supplied by prolonged infusion of water in the rectum, by which means three or four quarts can be incorporated in the twenty-four hours. The patients increase in weight and strength and the agitation subsides, although the vomiting was not influenced in his experience. He argues that this is not to be expected. In case symptoms of intoxication develop, the pregnancy should be interrupted, and if some reliable means of testing the liver function could be devised, this could be done in time to prevent serious consequences. Williams found that the ammonia in the urine rose from an average of 4 to 38 per cent. in his cases. The Strauss levulose test might also prove useful in this connection. Loss of weight is not a reliable index, as this is determined more by the loss of fluids from the excessive salivary and gastric secretions in these cases. The neurosis and the toxemia are only different stages of the same process, and, while the first phase lasts, every effort should be made to prevent the transition into the second phase.

78. **To Prevent Brachial Paralysis After Operations in Trendelenburg Position.**—Instead of hard rests for the arms, Horst commends a rest supplied with an inflatable rubber cushion for each arm. Such have been in use for some time at Olshausen's gynecologic clinic at Berlin, and the patients no longer complain of aching shoulders or stiffness in the arms after operations.

79, 82 and 83. **Suprarenal Treatment of Osteomalacia.**—Puppel reports a case of osteomalacia appearing about the third month of pregnancy in a ii-para of 19. By the eighth month she was bedridden. Phosphorus and iron failed to give relief, and a small dose—1 c.c. of a 1 to 5,000 solution of a suprarenal preparation—was injected. The injection was followed by transient vomiting, palpitations, tremor and precordial anguish, as again after a second injection three days later. Two other injections were given, all within eleven days, at the end of which time the patient was up and attending to her household duties, clinically cured. The child was delivered at the ninth month; the first child had also been born at the ninth month. No further symptoms of osteomalacia have been noticed since. A second patient, an viii-para of 34, all of whose children had been more or less rachitic, presented symptoms of osteomalacia for the first time in the eighth month of pregnancy, and the suprarenal treatment was instituted, but without the least result except the same by-effects as had been observed in the other case. Nearly three times as much of the preparation was injected in this case, but without benefit. Neu discusses the various communications on this subject that have appeared, and the contradictory results in the experience of various authors. He urges all who try this method to state in their reports the details in regard to the source of the preparation, animal or synthetic origin, age of the solution, and the single doses, computed according to the amount of the substance, as, for example, 0.5 c.c. of a 1 to 1,000 solution of adrenalin represents 0.0005 gm. (1/134 grain) adrenalin. Bossi announces that further experience is confirming his assertions in regard to the cure of osteomalacia in women by administration of suprarenal extract, and also that removal of part or the whole of the suprarenals in animals induces true osteoporosity in the skeleton in the course of a few days, some times in less than fifteen days. Radioscopy of all the sheep from which he removed one suprarenal, showed in from eleven to fifteen days a notable porosity of the bones of the pelvis with curvature of the bones. He is soon to publish the detailed report of his experiences, with the skiagrams. Abnormal amounts of salts were always found in the urine of the animals. His experience suggests that suprarenal extract might stimulate the ossification of the bones which, in rachitis, lags behind the development of the child in other respects corresponding to its age. The bones remain too soft and bend under the weight of the body. If the process of ossification can be stimulated by administration of suprarenal extract, he claims that then it will be possible to prevent the development of deformity in the skeleton, especially in the pelvis, and to cure the rachitis. The results were good in two rickety children whom he treated on these principles. Jovane of Naples reported at the Italian Pediatric Congress in October that he had obtained good results in 18 little girls under this treatment. Jemma also reported good results in 10 cases at Palermo.

## Deutsche medizinische Wochenschrift, Berlin.

*December 12, XXXIII, No. 50, pp. 2073-2120.*

85 *Courses of Dieting. (Diätkuren.) A. Albu.
86 The Newer Medicines Used in Pulmonary Tuberculosis. (Neuere Heilmittel gegen Lungentuberkulose.) C. P. Hilbert.
87 *Resection of First Costal Cartilage to Combat Incipient Apical Tuberculosis. (Resektion des ersten Rippenknorpels wegen beginnender Lungenspitzentuberkulose.) W. Kausch.
88 *Ocular Reaction to Tuberculin. (Ophthalmoreaktion.) F. Kohler.
89 Two Cases of Muscular Stenosis of the Left Conus Arteriosus. (Linkseitige muskulöse Conusstenosen.) A. Schmincke.
90 *Negative Influence of Mercurial Treatment of Syphilis on Development of Parasyphilitic Nervous Affections. (Hg-Behandlung der Syphilis und metasyphilitischer Nervenkrankheiten.) P. Schuster.
91 Sulphur in Therapeutics. (Therapeutische Verwendung des Schwefels.) E. Riecke.

92 Unreliability of Ordinary Graduated Glasses and Droppers. (Einnehmegläser und Tropfgläser.) G. Edlefsen.

*December 19, No. 51, pp. 2121-2168.*

93 Prevention and Treatment of Perineal Lacerations. F. Ahlfeld.

94 Treatment of Tuberculosis with Marmorek's Serum and "New Tuberculin." M. Elsaesser.

95 *Treatment of External Anthrax. (Therapie des äusseren Milzbrandes.) O. Creite.

96 *Experiences with Mammitis, Especially Treatment with Suction Hyperemia. (Brustdrüsenentzündungen.) F. Heinsius and W. Lissauer.

97 Pressure-raising Substances in Blood in Chronic Nephritis. (Drucksteigernde Substanzen im Blute bei chronischer Nephritis.) H. Schur and I. Wiesel.

98 Wright's Opsonic Method. (A. E. Wright's Inokulationsmethode.) T. Neuburger.

99 Treatment of Psoriasis with Ultraviolet Rays. (Behandlung der Schuppenflechte mit Ultravioletten Strahlen.) P. F. Becker.

**85. Courses of Dieting.**—Albu mentions a number of important minor points in the course of his review of the various systems of dieting. He believes that important progress has been made in the discovery that superalimentation can be pushed even when the digestive apparatus is below par, especially the motor function. Atony and ptosis of the stomach seem to be particularly favorable objects for superalimentation—*Mastkur*. These conditions, he asserts, are never local affections, but merely manifestations of a general relaxation of the tissues. The superalimentation must be modified in these cases to supply the food in more concentrated form than under other conditions, or the fluids must be fractioned and taken in smaller amounts at one or two hour intervals. The latter modification is often useful even when the digestive tract is intact. He says further that he has frequently applied superalimentation in neurasthenia without resorting to meat, with brilliant results. It is not necessary always to keep the patient constantly in bed. A certain amount of exercise seems to increase the appetite. Not more than two quarts of milk a day should be allowed. By evaporating the milk down to half its bulk, the stomach is spared the useless task of taking care of so much water. Constipation from the milk is combated by addition of milk sugar, and a tendency to diarrhea by lime water. A vegetable diet is practically a reduction of the average amount of nourishment, satisfying hunger without supplying many calories, especially with potatoes, fruits, etc. Grapes stimulate intestinal activity by their sugar and acid contents, and a "grape cure" is especially indicated in chronic constipation; the grapes should be eaten before breakfast and before retiring, and an hour or so before the noon meal. As much as three pounds can thus be eaten during the day. The "lemon cure" has no scientific basis as yet, but its practical value is beyond question, he states, although it has been exaggerated. Besides an energetic action on the intestines, gouty affections and obesity are often benefited by the lemons. Not more than two or three lemons a day should be taken, and these in the form of lemonade; the patient should refrain from milk and fat foods at the time. In the dietetic regulations for diabetics, a "starvation day" or a period with vegetables or oatmeal only should be interposed from time to time. The oatmeal diet should not be kept up longer than three or five days. He concludes with the statement that restriction of water and salt in the dietary seems to be proving an effectual curative factor in the treatment of heart and kidney affections with failing compensation. Restriction of salt is also particularly useful in epilepsy, thus allowing the bromid given to take the place of the missing sodium chlorid in the tissues and juices.

**87. Resection of First Costal Cartilage for Apical Tuberculosis.**—Kausch performed Freund's operation on a woman of 53 with an incipient tuberculous apical process. He resected a segment of the ossified first costal cartilage, thus mobilizing the rib. The operation proved simple and harmless and is, he thinks, the first on record in which it was done for an incipient tuberculous process. The resection of a single cartilage is, of course, much less serious than the multiple resections required in case of emphysema.

**88. Ocular Reaction to Tuberculin.**—The reaction was positive in 95 per cent. of 169 tuberculous patients. The disease was in an advanced stage in the negative cases.

**90. Mercurial Treatment of Syphilis and Development of Tabes and Paralysis.**—For years Schuster has been collecting data in regard to the preceding mercurial treatment in all his cases of parasyphilitic nervous affections. In 75 cases of tabes with a verified history of syphilis, only 17 (22.7 per cent.) of the patients had never had mercurial treatment; 31 (41.3 per cent.) had taken a single course; 13 (17.3 per cent.) two courses, and 14 (18.7 per cent.) had had from three to eight courses. In 35 cases of paralysis after verified syphilis, only 3 (8.6 per cent.) of the patients had never had specific treatment; 21 (60 per cent.) had taken a single course; 5 (14.3 per cent.) had taken two courses, and 6 (17.1 per cent.) had records of from three to nine courses. In 76 cases of cerebrospinal syphilis, 10 (13.2 per cent.) of the patients had never had mercurial treatment; 36 (47.4 per cent.) had had one course; 15 (19.7 per cent.) two courses, and 15 from three to six courses. No cases are included in these statistics except those in which the records of the syphilis and of the treatment were verified as authentic. A surprising fact brought out by this study is that the interval between the primary lesion and the development of the nervous trouble was not lengthened by the mercurial treatment. On the contrary, the interval was longest in the untreated cases and briefer in proportion to the number of courses that had been taken. In Eulenberg's 27 tabetics the nervous trouble first manifested itself after an average interval of 12.4 years among the 13 untreated patients; after 9.3 years in the 11 patients who had taken a single course, and after 5 years in the 3 who had had from two to four courses In Dinkler's 49 cases the intervals were respectively 11.7 years, 10.6 years and 6.5 years. The range in Schuster's 75 tabetics was from 13.4 years in the untreated to 7.9 years in the cases in which the largest number of courses had been taken. In paralysis also there was nothing to indicate that the interval had been prolonged by the mercurial treatment. From all this material Schuster draws the conclusion that the evidence is against the assumption that mercurial treatment wards off or retards the "metasyphilitic" nervous affections. The evidence seems, rather, to favor the view that these nervous affections are the work of the antibodies of syphilis, and that the syphilitic virus itself is not responsible for them. Biologic tests have shown that mercurial treatment does not expel the antibodies from the blood. The clinical picture of tabes and paralysis is the same whether the formerly syphilitic patient received mercurial treatment or not, while clinical and biologic evidence is accumulating to sustain the theory that the nervous after-affections of syphilis are caused by the antibodies generated in the course of the disease, and on which mercury seems to have little influence.

**95. Treatment of External Anthrax.**—Creite protests against the mutilating and cauterizing treatment of external anthrax as unnecessary, and reports thirteen cases which seem to emphasize the advantages of his conservative, harmless technic. The patient is kept quiet in bed, with the affected limb suspended when possible, and the lesion dressed with a disinfectant fluid, preferably a 2 per cent. solution of aluminum acetate. In twelve of the patients the lesion was on the arm, and under this simple treatment they promptly recovered with no disturbance in the functioning of the arm.

**96 Suction Hyperemia in Treatment of Mastitis.**—Heinsius' experience with fifteen patients confirms the benefit from Bier's cupping-glass treatment of mastitis. Mastitis thus treated does not impair the mammary function later. The pain was relieved at once and healing hastened. He adds that the only disadvantage of the method is that it requires the constant oversight of the physician.

## Münchener medizinische Wochenschrift.

*December 10, LIV, No. 50, pp. 2465-2512.*

100 *Extra Systoles in the Pulsation of the Auricles. (Vorhofpulsation.) E. Rautenberg.

101 *Tube Casts and Albumin in Urine. (Zylindrurie und Albuminurie.) P. Asch.

102 Study of the Mendel-Bechterew Dorsal Foot Reflex. E. Osann.

103 *Decapsulation of the Kidney in Eclampsia. (Nierendekapsulation bei Eklampsie.) O. Franck.

104 *Postoperative Pulmonary Complications and Thrombosis After Ether Anesthesia. A. Otte.

105 Uselessness of Addition of Suprarenal Preparations in Spinal Anesthesia. (Wertlosigkeit des Zusatzes von Nebennierenpräparaten bei der Lumbalanästhesie.) F. Michelsson.

106 Erotic Epididymitis. L. Waelsch.

107 Postoperative Dietetic Treatment of Pancreatic Affections. (Totalexstirpation einer Pankreaszyste.) W. Schmidt.

108 Case of Swine-Erysipelas in Man, Cured by Swine-Erysipelas Serum. (Schweinerotlauf beim Menschen.) A. Weixel.
109 Pigmentation of the Nails in Secondary Syphilis. H. Vörner.
110 Sterile Raw Catgut. (Steril-Rohkatgut.) F. Kuhn.
111 Ramie Fibers for Surgical Sutures. (Ramiezwirn als chirurgische Faden.) M. Madlener.
112 Simple Fermentation Saccharometer for the General Practitioner. (Einfacher Gärungssaccharometer.) A. Basler.

**100. Analysis of the Extra Systoles in Pulsation of the Auricles.**—Rautenberg presents the tracings of the pulsation of the auricles registered through the esophagus, and analyzes the findings. They seem to throw light on several obscure points in regard to the contractions of the heart.

**101. Tube Casts and Albumin in Urine.**—Asch emphasizes the necessity for microscopic examination of the urine as well as determination of the proportion of albumin, and relates the results of tests on sixty dogs to determine the influence on the kidney of various bacteria and their products. There may be tube casts in the urine without even a trace of albumin.

**103. Decapsulation of the Kidney in Eclampsia.**—Franck reports a case of rebellious eclampsia in which he performed decapsulation of the kidney, and he compares the results with those in nine similar cases that have been reported. The eclampsia subsided in his case, but the patient succumbed to an intercurrent pneumonia. Autopsy seventy-two hours after the decapsulation showed that the kidney had become firmly adherent to the adjacent tissues, and he believes that this explains the benefit derived in these cases. The circulation is promoted by these adhesions as by a Talma operation to establish collateral circulation in case of ascites. In the 10 cases on record the decapsulation was followed by rapid recovery of 6 of the patients; in 2 cases no benefit was manifest, and in 2 others improvement was probable but not pronounced. In 8 cases the woman had been delivered before the decapsulation, including one case in which no influence from the operation was apparent. In the other cases the decapsulation had been done before the evacuation of the uterus, the results being successful only in one instance. It is dubious whether the fatal termination in one of Edebohls' cases should be ascribed to the decapsulation, and the collapse in Polano's case was the result of pulmonary edema. All the other patients recovered. Even if this mortality of 30 per cent. is ascribed to the operation, it is such a lowering of the average death rate in severe eclampsia in which the convulsions continue after the uterus is emptied, that immediate decapsulation should be advised in all such cases, he declares.

**104. Prevention of Postoperative Pulmonary Complications and Thrombosis.**—Otte, assistant at Rissmann's maternity, states that the technic for general anesthesia which is used there has prevented any serious complications during the seven years since it was introduced. The special features are thorough disinfection of the mouth and air passages and protection of the patient against chilling. The patient's mouth is rinsed out repeatedly with a disinfectant wash and the evening before the operation she inhales the steam of a mixture of 0.2 parts thymol; 1 part salicylic acid; 5 parts alcohol, and boiling water to 200 parts. This inhalation is kept up for half an hour and repeated the next morning just before the operation. Half an hour before the operation 0.01 gm. (1/6 grain) morphin is injected. Ether is used for the anesthetic, in graduated amounts for graduated intervals of time: commencing with 10 c.c., two minutes later 20 c.c., two minutes later 10 c.c., and then 5 c.c. every five minutes, or 10 c.c. if needed, increasing to 10 c.c. occasionally. After the operation the patient is warmly wrapped in hot blankets and a hot sheet laid over her face, to protect against chilling as she is wheeled from the operating room through the corridors. The bed is warmed with hot-water bottles and a nurse waits beside the bed, arranging the inhalation apparatus so that the patient inhales the disinfectant fumes even before she rouses from the effect of the anesthetic. Even in patients with pre-existing respiratory affections no aggravation of these has occurred since this technic was introduced. The inhalations are kept up later, using merely a salt solution, and the results have been surprisingly fine. He believes that this is due mainly to the deep breathing that accompanies the use of the inhaler. The long, deep breathing has a favorable action on the venous circulation, besides its other advantages, and effectually does away with the necessity for the patient's getting up very early after the operation, to regulate the circulation. The patient is asked to change her position and move her limbs, cautiously but frequently. Otte regards this technic as simpler and less harmful than spinal anesthesia to date, although he still prefers the latter for extensive prolapse operations on elderly women.

### Hygiea, Stockholm.

*November, LXIX, No. 11, pp. 1057-1170.*

113 Magnus Huss, 1807-1890. P. J. Wising.
114 *Ulceromembranous Angina. Vincent's Angina. G. Holmgren.
115 *Pancreatic Cysts and Their Surgical Treatment. (Pankreascystor.) C. Adlercreutz.
116 *Blood Findings in Dementia Præcox. (Blodundersokningar pa sinnessjuka.) H. Lundvall.

**114. Ulceromembranous Angina.**—Holmgren reports ten cases and compares them with those that have been published in THE JOURNAL and elsewhere. He found a gargle of 2 per cent. hydrogen dioxid very useful, followed by topical application of a 2 per cent. solution of silver nitrate or 2 per thousand bichlorid of mercury solution or Vincent's tincture of iodin. When the ulcerating tonsil was removed, the process was arrested at once. The bacteriologic findings are shown in a colored plate.

**115. Cysts in the Pancreas.**—Adlercreutz reports a case and devotes nearly thirty pages to the history of surgical treatment and the end results.

**116. The Blood Findings in the Insane.**—Lundvall gives the tabulated details of repeated examination of the blood in seven men and four women, all suffering from dementia præcox. The findings seem to show a periodical accumulation of toxins with corresponding "blood crises," evidenced in destruction of the red corpuscles and increase of the white. When these "blood crises" reach a certain intensity, psychic symptoms are observed.

### Norsk Magazin for Lægevidenskaben, Christiania.

*November, XLVIII, No. 11, pp. 1241-1360.*

117 Poliomyelitis in Norway in 1868. (Et gammelt aktstykke.) C. Leegaard.
118 Stokes-Adams Syndrome and Heart Block in Man. P. F. Holst.
119 Thiosinamin in Treatment of Ear Affections. (Thiosinamin—et hjælpemiddel ved behandling af øresygdomme.) H. Daae.
120 Beriberi. V. Uchermann.
121 Mastoid Resection in Case of Interposed Sigmoid Sinus. R. Gording.

## Books Received

**Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.**

A VERY YOUNG OVUM IN SITU. By Prof. G. Leopold, Geheimer Medizinalrat, Director of the Royal Gynecologic Clinic and School for Midwifery. Authorized English translation, by W. H. Vogt, M.D., Gynecologist and Obstetrician to the Lutheran Hospital, St. Louis. Cloth. Pp. 69, with 16 lithographic plates. Price, $3.50. St. Louis: C. V. Mosby Co., 1907.

POLLUTION OF NEW YORK HARBOR as a Menace to Health by the Dissemination of Intestinal Diseases Through the Agency of the Common House Fly. Report by Daniel D. Jackson, S.B., to the Committee on Pollution of the Merchants' Association of New York. Paper. Pp. 22. New York: Merchants' Association of New York, 1907.

PHARMACEUTICAL AND CHEMICAL PROBLEMS. By Oscar Oldberg, Ph.D., Professor of Pharmacy and Dean of the School of Pharmacy of Northwestern University. Fourth Edition, Revised and Enlarged. Cloth. Pp. 369. Price, $3.00. Chicago: Chicago Medical Book Co., 1907.

PATHOLOGY. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., Professor of General Pathology and Bacteriology in King's College, London. Second Edition. Cloth. Pp. 585. Price, $3.25. Philadelphia: P. Blakiston's Son & Co., 1907.

ONE HUNDRED YEARS OF NEW HAMPSHIRE SURGERY. A Brief Sketch of the Life and Work of New Hampshire Surgeons from 1800 to 1900. By Frank Blaisdell, M.D. Paper. Pp. 40. Manchester: John B. Clarke Co., 1907.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS. Transactions of Third Annual Meeting. Paper. Pp. 370. Philadelphia: W. F. Fell Co., 1907.

THIRTY-SECOND ANNUAL REPORT of Lawrence General Hospital and Children's Home. Paper. Pp. 70. Lawrence, Mass.: Lawrence Bindery Co., 1907.

MORTMAIN. By Arthur Train. Cloth. Pp. 314. Price $1.50. New York: D. Appleton & Co., 1907.